



# AIR CONDITIONING & REFRIGERATION News

Vol. 65, No. 3, Serial No. 1194

February 4, 1952

Subscription Price, \$5 Per Year

Entered as second-class matter October 3, 1936 at the post office at Detroit, Michigan, under the Act of March 3, 1879. Trade Mark Registered U. S. Patent Office. Copyright 1952, by Business News Publishing Co.

## 'Levelcold' Big Innovation In '52 Frigidaires

Imperial 'Cyclamatic' Models Offer New Type Refrigerating System

DAYTON—Highlighted by the introduction of the new Imperial "Cyclamatic" models, with "Roll-to-you" shelves and a brand new system for automatic control of temperature, humidity, and frost formation, the 1952 line of Frigidaire household refrigerators is being announced to the trade this month in a series of field showings.

All shelves on these Imperial models glide out on lifetime nylon rollers, bringing foods forward for easy access. Additional convenient storage space is provided by shelves on the door panel.

With the Cyclamatic system, Frigidaire engineers claim to provide a new kind of refrigeration called "Levelcold" which is defined as "temperatures which do not 'see-saw' with weather changes, heavier usage, or during automatic defrosting."

Constant temperatures are maintained in the refrigerator section by concealed "Cold-Wall" chilling coils and a "Refrig-o-plate" on the back wall of the compartment. The Cyclamatic system regulates the flow of cold, controls humidity, and "banishes" frost before it collects, providing automatic defrosting without use of clocks, timers, or heaters, Frigidaire engineers declare.

The Refrig-O-Plate helps to maintain an even cabinet interior temperature and proper relative humidity, as in some previous Frigidaire models. However, no special heating elements are used to defrost the plate, with defrosting being done automatically and regularly at the end of each refrigerant cycle, when warm refrigerant flows into the Refrig-O-Plate coils.

The food freezer, completely insulated and sealed from the rest of the cabinet, has refrigerating coils in (Concluded on Page 4, Column 1)

## INSIDE DOPE

by GEORGE F. TAUBENECK

**'Twas Ever Thus**  
Beware, Girls!  
Voice of Experience  
Success!  
Unanswerable Argument  
Two Years Later  
And Then He Rushed Home  
Tit for Tat  
First Things First  
ou Do Grow Older  
maginary Story  
he Real Thing?  
Quaker Yarn  
Man of Few Words  
Not So Funny  
Grand Philosophy  
The Poetry of Motherhood  
Reason for Hope  
Dad Blushed  
This Fable Was Contributed  
Money Is Money

### 'Twas Ever Thus

"I've got a lot of things I want to talk to you about," the wife greeted her hubby as he arrived home after a proverbial hard day's work.

"That's good," he parlayed. "I thought you would want to talk to me about a lot of things you haven't got."

### Beware, Girls!

"I know a man who has been married 25 years, and he's home every night."

"I'd call that real devotion."  
"The doctor calls it paralysis."

### Voice of Experience

"Just can't understand it," complained Joe at a cocktail party. "That gal over there in the red dress was winking at me and giving me the old come-on a few minutes ago. But now she won't even look at me."

"Yes," sighed Joe's listener. "My wife does have hot-and-cold apella."

### Success!

At the first session of a Public Speaking class each student was asked to stand, give name, occupation, etc.

A plain, rosy-cheeked girl stood up, pronounced her name and admitted: "I was born and raised on a farm. I'm a housewife now, and my husband is a traveling salesman."

When she sat down the fun-loving instructor looked her over with feigned surprise.

"Class," he cried, "we are privileged. Here is a farmer's daughter who married the man!"

### Unanswerable Argument

"Everybody knows that men have better judgment than women," contended Hubby in a desperate attempt to clinch his argument about household finances.

"You're so right, dear," purred Wife, "and I can prove it. Lookie: You picked me out, and persuaded me to marry you."

### Two Years Later

"Gee, Myrtle," admired Sally, "you're sure all dolled up tonight. Whatcha doin'?"

"Husband-hunting."

"But Myrt," objected her friend, "you already got a husband."

"Yeah. That's the one I'm hunting for!"

### And Then He Rushed Home

Stingy Steven "apent" the Christmas holidays away from home, and wired the little woman the following greetings:

"Merry Christmas. Here is my check for a thousand kisses."

Next morning he picked up this telegraphed Night Letter at the hotel desk:

"Thanks so much for the lovely check, Sam. The milkman cashed it for me."

(Concluded on Page 8, Column 1)

## Kalamazoo Deal To Speed Kelvinator's Range Expansion

DETROIT—Expansion of Kelvinator's electric range business will be accelerated as a result of the acquisition of range facilities from the Kalamazoo Stove & Furnace Co., G. W. Mason, president of Nash-Kelvinator, stated last week.

The \$2 million transaction, approved by a vote of Kalamazoo stockholders provides Kelvinator with all Kalamazoo range tools, dies, assembly and checking fixtures, inventories of raw materials, in-process and purchased parts for gas and electric ranges in standard sizes and a new 30-in. size. No plant properties were involved in the transaction.

Mason said the transfer of Kalamazoo's base period allotments and the acquisition of additional parts and materials will permit Kelvinator to continue expansion of its electric range business. However, Kelvinator has no present plans to manufacture gas ranges "beyond whatever may be necessary for liquidating inventories of in-process parts," Mason said.

Liquidation of current Kalamazoo inventories and transfer of tools and fixtures to Kelvinator's range manufacturing plant at Grand Rapids, Mich. are to proceed as quickly as possible.

## Defrosting Feature In Leonard Line

DETROIT—Eight models priced from \$229.95 to \$499.95 comprise the 1952 refrigerator line of Leonard Div., Nash-Kelvinator Corp., according to W. L. Jeffrey, Leonard sales manager.

Newest advance for 1952, Jeffrey said, is Leonard's new method of self-defrosting. Defrosting is accomplished automatically at a predetermined time "without complicated mechanisms or added wiring, and so fast that all foods in the frozen food chest stay continuously frozen," he declared.

Door shelves have been added on all models 8 cu. ft. and larger. A re- (Concluded on Page 29, Column 4)

## Carrier Offers 1/3-Hp. Window Type Cooler

SYRACUSE, N. Y.—A new, low-priced 1/3-hp. window sill room air conditioner, embodying the same engineering, construction, and design standards featured in Carrier's established line of 1/2 to 1 1/2-hp. models, was announced recently by Carrier Corp. here.

The new model is in production and will go on display immediately at most Carrier dealers throughout the country.

Except for price and capacity, it was stated, the 1/3-hp. room air conditioner will be similar to Carrier's other models in every respect, including vibrationless hermetic compression. (Concluded on Back Page, Column 1)

## Mitchell Prices Cut \$10-\$20 on 6 Models

CHICAGO—Mitchell Mfg. Co. here has announced price cuts ranging from \$10 to \$20 on all but one model of its line.

E. A. Tracey, vice president in charge of the concern's Air Conditioning Div., said the only price not (Concluded on Back Page, Column 4)

## '53 All-Industry Show Scheduled For Cleveland

REMA Also Approves Three Educational Conferences In Intervening Period

WASHINGTON, D. C.—The 8th All-Industry Refrigeration & Air Conditioning Exposition will be held in the Cleveland Municipal Auditorium in November of 1953, it has been announced by Refrigeration Equipment Manufacturers Association, sponsoring organization of the show.

It was also announced that the 1951 annual meeting of REMA will be held this March 26-28 at The Greenbrier, White Sulphur Springs, W. Va. Also, REMA's board has approved a budget for holding three Educational Conferences between now and the time of the next All-Industry Exposition in November of 1953.

The decision to hold the 1953 All-Industry Show in Cleveland was made following a tabulation of answers to a survey of opinion among exhibitors at the last All-Industry Show. It is pointed out that the Cleveland Municipal Auditorium offers many facilities without extra charge or expense, with water and any type electrical current available almost everywhere in the huge hall. The Auditorium has a number of large entrances which enables trucks to unload quickly.

General program for the REMA 1952 annual meeting to be held March 26-28 at The Greenbrier is as follows:

Wednesday, March 26—Board of Directors Meeting.

Thursday, March 27—Product Section Meetings.

Thursday Night, March 27—Cocktail Party.

Friday, March 28—Annual Membership Meeting.

It has been announced that since some other convention groups will be departing from The Greenbrier on March 26, REMA will be allotted rooms to accommodate a maximum of 40 persons on that day, which should be sufficient for the board members. All others are requested to schedule their arrival for Thursday morning, March 27, in order to be sure of suitable rooms. The hotel has announced that it will be able (Concluded on Back Page, Column 3)

## RACCA To Tell Washington Of Restriction Hardship

NEW YORK CITY—A presentation on how restrictions on critical materials are affecting the refrigeration contractor will be made at the Construction Industry Advisory Council's meeting in Washington next Tuesday, Feb. 12, by Nathan Edelstein, executive vice president, Refrigeration & Air Conditioning Contractors Association.

While in Washington, Edelstein will attempt to get some relief for the refrigeration contractor from restrictions on the use of copper tubing for water and waste lines in refrigeration systems.

While RACCA has surveyed its own membership on the effects of controls and will use this in the presentation, Edelstein is "inviting opinions and facts from all contractors, and asks that such data be forwarded at once to him at the headquarters, Refrigeration & Air Conditioning Contractors Association, 154 Nassau St., New York City.

## I-H '52 Line Has New 'Once-a-Day' Defrosting System

CHICAGO—International Harvester Co. recently introduced its new line of 1952 refrigerators containing a new automatic defrosting system.

In a meeting at the Drake hotel here, T. B. Hale, vice president, general sales, told a group of 500 district office and distributor personnel that this new innovation permits the owner to choose any of three defrosting methods.

"In order to defrost automatically, a housewife has only to set the control dial and forget it," Hale said. "Automatic defrosting then occurs every day at 3 a.m. The refrigerator also may be defrosted electrically at any time merely by changing the control setting," he added.

Color, too, again is an important I-H feature in the eight-model line of "femineered" refrigerators, which range in capacity from 7.4 to 9.5 cu. ft.

Colored door handles, introduced in 1951 by International Harvester, are retained and, in addition, four models are tinted a soft "Spring-fresh" green on the inner door panel and breaker strip.

Two of these four have all-green interiors. Three models have all-white interiors, and one has a green chill tray and freezer door.

Another color—gold—has been added to the colored door handles, (Concluded on Page 29, Column 1)

## Carrier Names 3 to Executive Positions

SYRACUSE, N. Y.—John M. Bickel has been named manager of the Carrier Corp. dealer sales division; Russell H. Gray has been appointed executive assistant to William Bynum, Carrier executive vice president; and Ralph Ebbert is now acting director of public relations for the firm.

The appointments, announced by President Cloud Wampler, were made to fill the positions left vacant by the deaths of John F. Chester, director of public relations; Carl U. Spriggs, manager of the dealer sales division; and H. Lee Sterry, executive assistant, in an airplane crash Jan. 22 near Newark airport.

Bickel, Gray, and Ebbert have all been with Carrier for many years. Bickel had been assistant sales manager of the dealer sales division, with headquarters in New York City. Gray was formerly district manager of the direct sales division, with headquarters in Atlanta. Ebbert is now acting director of public relations.

John A. Gazelle and George P. (Concluded on Page 29, Column 2)

## House Proposal Would Require Manual for Appliances

WASHINGTON, D. C.—If Walt Horan, Republican representative from the state of Washington, has his way, appliance manufacturers are going to have to furnish an instruction book with every household appliance they sell in interstate commerce.

Rep. Horan recently introduced a bill (H.R. 6219) to attain that end in the House of Representatives. He wants such booklets to be written in language that the ordinary household user can understand. He wants them to tell the user how the appliance (Concluded on Page 29, Column 3)

## Cooling Contractors Shaken Down In N. Y., Trial Testimony Shows

NEW YORK CITY—Installers of commercial refrigeration equipment have been "shaken down" for money and other forms of gratuities by New York City Fire Department inspectors, it was revealed in testimony given here last week during the trial of former Deputy Fire Commissioner James J. Moran.

The information about the acceptance by fire department inspectors of illegal gratuities from refrigeration contractors came as a surprise, as all the testimony and "scandal" in the case had developed around a "shakedown" of oil burner installers.

However, in the cross-examination of Fire Lt. John G. Frey before the grand jury, the witness testified that although he rejected Moran's offer to help shake down fuel oil installers ("didn't feel that he had the rank to handle it") he was assigned to inspect refrigeration installations and on this detail accepted "gifts" for "various services" for contractors.

The refrigeration inspection "ice" (Concluded on Back Page, Column 2)

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### Vacuum Cleaner, Freezer Used To Preserve Fish

OAKLAND, Calif.—George Whitcomb, appliance division buyer of the Jackson Furniture Co. here, recently came upon an unusual and novel use for the Lewis vacuum cleaner.

Returning from a fishing trip with a 30-lb salmon among his catch, he did not have sufficient time to clean and slice the salmon before putting it into his freezer at home.

Instead, Whitcomb took the salmon to the store and placed it in a freezer until it was frozen. Then with his Lewis vacuum cleaner and the spray gun filled with water, he sprayed the salmon every hour until it had six coats of icing, which is ideal.

**SLICK TRICK**—Six coats of icing over this whole fish proved ideal for preserving it at its natural best. George Whitcomb of Jackson Furniture Co. uses a Lewis vacuum cleaner to show how the unique stunt works.

### Warehousemen on Program For Frozen Foods Meetings

WASHINGTON, D. C.—For the first time, America's public refrigerated warehousemen will take an active part in the National Frozen Foods Convention to be held this year at the Conrad Hilton hotel in Chicago March 2-7.

Signaling the growing importance of the relationship between the frozen food producer and distributor and the public refrigerated warehouseman, the warehousing industry's contribution to the program will be a panel discussion devoted to consideration of matters of mutual interest to packers, distributors, and warehousemen, the National Association of Refrigerated Warehouses said.

### Structural Steel, Brass Goods Limit Building In Second Quarter

WASHINGTON, D. C.—Structural steel for commercial buildings and plumbing brass goods for homes are the two major bottlenecks that will face the construction industry during the second quarter, Henry M. Heymann, general counsel of the National Production Authority's construction division, indicated recently.

Because of the shortage of structural steel, Heymann said that he did not anticipate the approval of any new commercial building in the second quarter and possibly in the third quarter.

"After the requirements for military construction, there will be only about half the structural steel available for commercial structures in the second quarter as in the first," he asserted.

Builders may get some foreign steel, he indicated, but warned that it will only be allotted where the builder will not use large quantities of copper, aluminum, and other critical materials.

Heymann noted that manufacturers of plumbers' brass goods are being allotted materials during the first half of this year in sufficient quantities to produce at only 50% of the rate they did last year.

"A 50% cut, extending for nine months and probably longer is bound in cause a severe shortage of plumbers' brass goods," he declared.

Other builders' items for home building are in good shape, Heymann said.

### Farmers' Co-op Experiments Find Immediate, Continuous Cooling Preserves Egg Quality

ALLIANCE, Ohio—United Cooperatives, Inc., farmer supply wholesale agency here, serving 27 regional purchasing co-ops in the United States and Puerto Rico, has announced that it is exploring the possibilities of a mechanical egg cooler for proper farm storage of eggs.

Work on the project has been under way since early in 1950 in United's testing and development laboratory at Ithaca, N. Y. Ten experimental models have been constructed and are now undergoing tests by experiment station poultry department staffs and by commercial poultrymen under practical operating conditions.

Means for maintaining the quality of eggs, which farmers hold until sufficient volume is accumulated to warrant moving into distribution channels, has long been an urgent need, United's announcement comments. A freshly laid egg is generally of high quality, but poultry scientists have found that deterioration begins the moment it is laid and continues until it is used, unless retarded by proper storage.

Four pertinent facts were established by surveys and experimental work at various agricultural experiment stations:

1. Approximately one third of the eggs handled at country stores or buying stations were below the grade "A" quality on the day they were received from the farmer. Grade "A," it is explained, is the quality on which it has been demonstrated that consumers are willing to pay a premium price.

2. Egg quality could be maintained in storage on the farm, provided freshly laid eggs were gathered promptly and quickly cooled to an average holding temperature of 55° F. with relative humidity of 85 to 90%.

3. Egg distributors should use refrigerated trucks, retail stores should have refrigerated display cases available, and large restaurants, hotels, and institutions should keep eggs under refrigeration until used.

4. The missing link in maintaining egg quality by mechanical means appears to be on the farm.

At the University of Ohio, the co-op stated, Professor I. P. Blausen of

the agricultural engineering department designed a mechanical egg cooler in the form of a drop-in refrigeration unit that would meet farm requirements. Further research proved that this type of egg cooler would provide the desired temperature and relative humidity to maintain egg quality.

Surveys among United's member co-ops indicated that sufficient eggs are sold on a grade basis to warrant the assumption that there would be a probable market for an egg cooler. The question of proper capacity came in for consideration and a check was made on daily production of eggs on individual poultry farms served by several of the large poultry marketing co-ops in the far western states.

This indicated that coolers having a capacity of 7½ and 15½ cases would take care of the needs of 90% of the poultrymen who are served by twice a week pickup trucks. Final result of these studies was the construction at Ithaca of eight 15½-case models which, with the two original smaller 7½-case models are now getting practical field testing.

"It should be pointed out," says the United Cooperatives announcement, "that there is no way of knowing when mechanical egg coolers will be on the market commercially. Undoubtedly field testing will suggest many changes for improvement and these will have to be further explored and tested before a cooler is even ready for manufacture."

"However, there is every indication that an egg cooler is needed by poultrymen and it would appear that mechanical egg coolers are a good possibility at some future date."

United Cooperatives has for some time distributed a line of refrigerators and freezer storage units which are custom-built and sold under the co-op's "Unico" brand name.

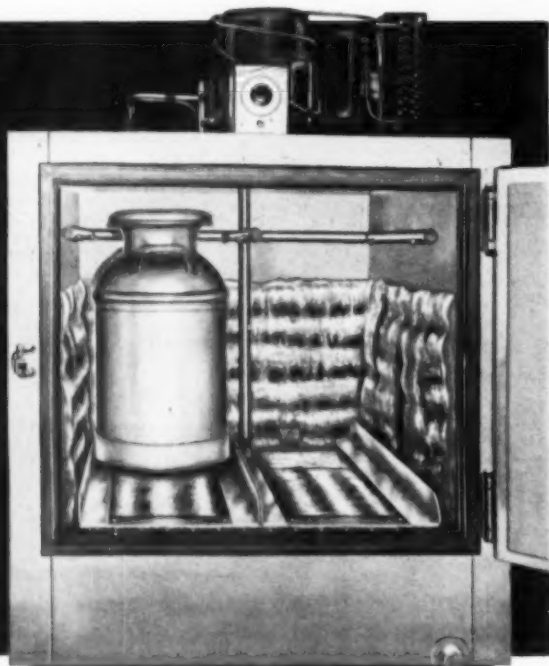
#### MORE INFORMATION?

Use Handy Coupon on "What's New" Page of this issue.  
Use Key No. for fastest service.

# HERE IT IS!

## ...the BOLDEST discovery in the milk cooling industry!

The **NEW**  
**ESCO**  
FRONT OPENING  
**ICY-WALL**  
MILK COOLER  
with  
WALLS of ICE



Sizes for cooling 4 to 24 cans a day

#### Exclusive selling FEATURES

1. GLISTENING WALLS OF ICE—with added ice reserve in bottom.
2. TWO-WAY WATER DISTRIBUTION—controlled for quick cooling of milk and rebuilding of ice.
3. STRICT TEMPERATURE CONTROL—walls of ice keep the milk cold.
4. INSIDE WALLS AND BOTTOM PERFECTLY SMOOTH.

#### 25th Anniversary Line

The new ESCO Front Opening "ICY-WALL" Milk Cooler with glistening walls of ice is the boldest idea in milk cooling in years—introduced on ESCO's 25th Anniversary after years of research. The result of the same practical experience and "know-how" that produced the famous ESCO "NI-AG-RA" Milk Cooler.

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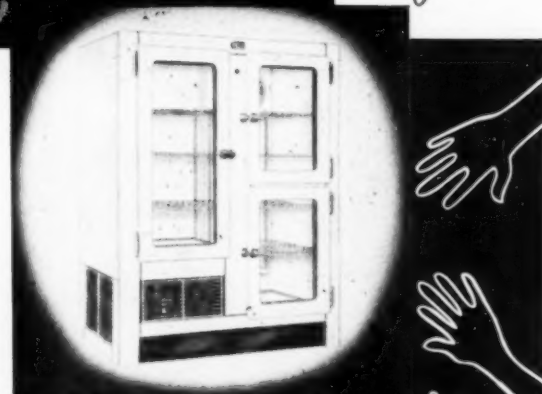
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SPECIALISTS IN THE MANUFACTURE OF FARM AND REFRIGERATION EQUIPMENT SINCE 1927

At New Low Prices **KOCH**  
Self Contained, Reach-in Refrigerators



**PORCELAIN INSIDE and OUT**  
**MODEL 3842 (42-cu. ft.) with Glass Doors**  
Also Available as Model 3865 (65-cu. ft.)

All models self-contained, with 5-year warranty on motor compressor.  
½ h.p. unit furnished with Model 2842 ½ h.p. unit furnished with Model 2865.

**STANDARD EQUIPMENT INCLUDES:**  
Solid doors  
Adjustable wire shelves throughout  
Interior lighting

**OPTIONAL EQUIPMENT INCLUDES:**  
One or more doors triple-glazed  
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Bakery bun pan racks

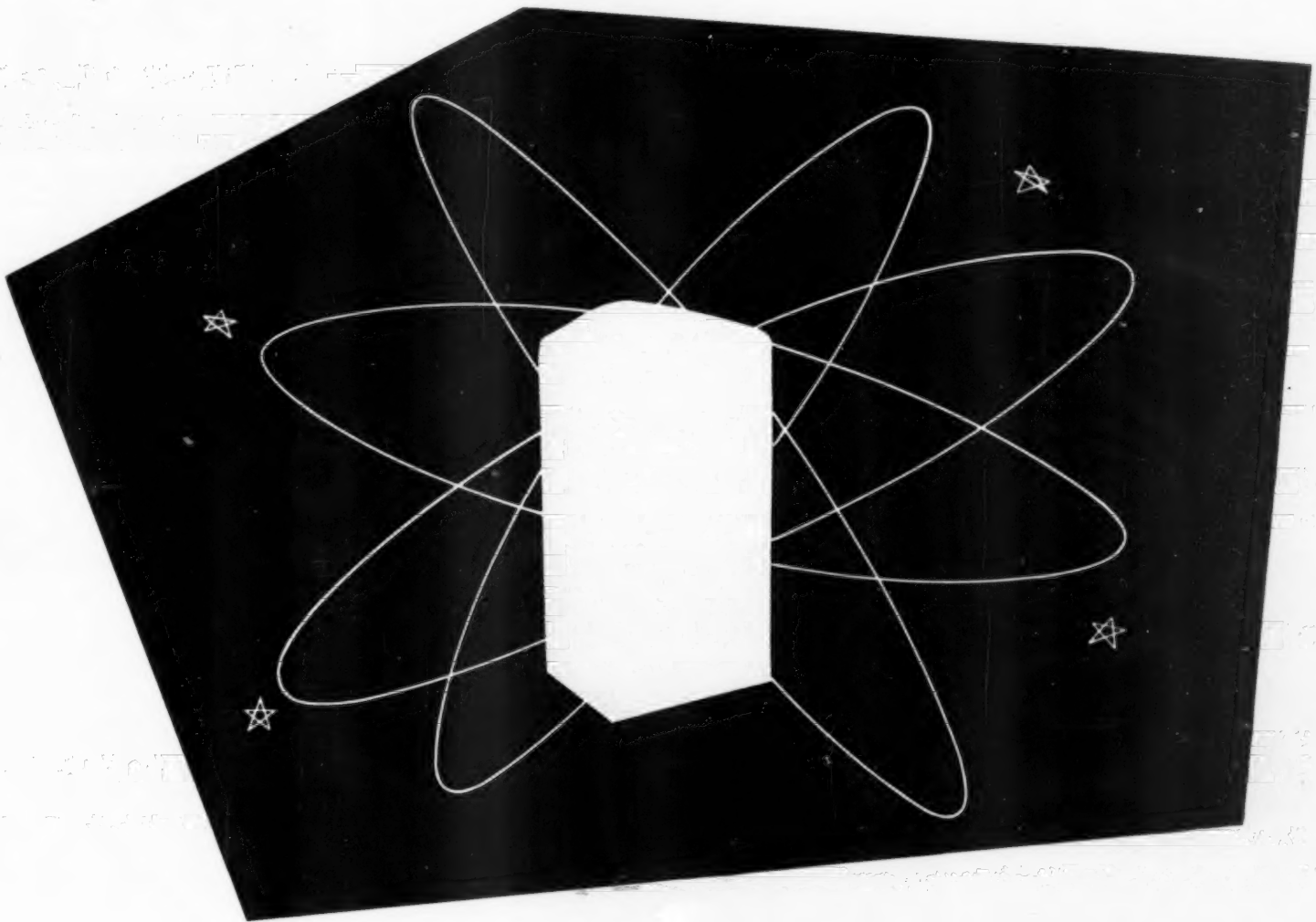
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Ushering in a new refrigeration era...



The completely new...completely different  
***Cycla-matic Frigidaire***

Now being shown to Frigidaire Dealers from coast to coast  
Watch for announcement in the February 23<sup>rd</sup> issue of POST



# Frigidaire Line Features 'Levelcold'--

(Continued from Page 1, Column 5)  
sides, back, top, and bottom. There is no defrosting heating device in this section.

New-type freezer compartment is actually a complete sub-assembly fitted into the cabinet interior. It does not serve to refrigerate the food compartment. Pressure plugs which force the freezer door to a tight seal and keep out moisture minimize frost accumulation, it is stated.

The new Frigidaire line includes four types of models with capacities ranging from 5 cu. ft. to 17 cu. ft., including three new Imperial models with Cycle-matic operation.

Top model of the Imperial line is the two-door 19.8-cu. ft. combination food freezer and refrigerator, model IR-108. The food freezing compartment is equipped with a separate door and holds up to 73 lbs. of frozen foods. Eight pounds of ice are contained in the handy Quickcube trays with attractive blue-green and golden finish.

The Roll-to-you shelves are of sturdy rustproof satin finished aluminum and glide out on lifetime nylon rollers. Total shelf area is 17.9 sq. ft. Other features include big twin porcelain Hydrators that hold a weeks supply of fruits and vegetables, and a sliding utility drawer for a variety of small items.

The other two Imperial models offer the same basic features as the two-door model, but provide graceful full-length doors, with separately sealed-in food freezers. The larger of the two models (IR-106) has a storage capacity of 10.6 cu. ft. while the other (IR-90) has a capacity of 9 cu. ft. The heavily insulated food

freezers hold, depending upon the model, 48 or 43 pounds of frozen foods. An insulated freezer door swings down to form a handy shelf for loading and unloading the freezer. Newly designed Quickcube trays hold 8 lbs. of ice.

Two Deluxe models in the 1952 Frigidaire line feature increased capacities and convenience. The larger model (DR-114) has a storage capacity of 11.4 cu. ft. and the other (DR-97), a capacity of 9.7 cu. ft. Each model has a full-width thickly insulated food freezer for holding a large supply of frozen foods at near zero temperature. The DR-114 freezer holds 49 lbs. while the DR-97 has a capacity of 44 lbs.

Three Quickcube ice trays rest on vertically arranged shelves. The insulated freezer door, which serves as a shelf when opened, is made of tough plastic and finished in white and gold trim.

The larger model in the Deluxe series has three Roll-to-you shelves, one stationary and one half shelf. Total shelf area is 21.9 sq. ft. The shelf arrangement is the same in the smaller model except for one less roll-out shelf. Total shelf area is 18 sq. ft.

Other features include, full width chill drawer located underneath the freezer for storing extra ice cubes, flat cuts of meat, and other foods. Also has a built-in season control for regulating cold air circulation; door storage shelves; big porcelain Hydrators surrounded by Cold-Wall cooling coils.

The Master line is highlighted by two new smartly styled refrigerators with full-width food freezers and in-



NEW 1952 Cycle-matic Frigidaire has convenient "Roll-to-you" shelves that glide out on nylon rollers. Unit is a two-door food freezer and refrigerator combination with exclusive Cycle-matic operation which automatically maintains safe, constant, Levelcold temperatures.



CYCLE-MATIC FRIGIDAIRE food freezer and refrigerator combination, features shelves that glide out on nylon rollers, handy storage space on door, and a new safe, constant cold called Levelcold.

creased storage capacity. The 8.6-cu. ft. model (MR-86), holds up to 41 lbs. of frozen foods and the 7.6-cu. ft. model (MR-76) has a freezer capacity of 38 lbs. The fully insulated door serves as a handy shelf when open and closes automatically when released. Quickcube trays provide ice service holding 6 full pounds.

Sturdy bar-type shelves are removable with the bottom shelf adjustable to three positions. In addition, these Master models are equipped with full-width plastic Chill Drawers; utility, half-shelves, and door storage shelves. The larger model has twin "stack-up" Hydrators while the other

is equipped with one roomy Hydrator combined with a handy lift-out half-shelf.

The 1952 Frigidaire refrigerator line has been rounded-out by three new Standard models of 8.8, 7.8, and 6-cu. ft. capacities.

For use where kitchen space is limited, two special models are included: A 6-cu. ft. (AR-60) and a 4.3-cu. ft. model (AR-43) of counter height. Basic Frigidaire features are also retained in these refrigerators including porcelain interiors; Quickcube ice trays; sturdy bar-type shelves, and Meter-Miser compressors. The line also includes a big, roomy two-door household refrigerator, with a 17.1-cu. ft. capacity.

Among Frigidaire's other appliance products for 1952, the electric range line will include a Deluxe two-oven model; two "Wonder-Oven" models; and other 40, 30, and 21-in. models. They will all retain their same general over-all appearance of Raymond Loewy styling and design features.

Top model of the line is the Deluxe 40-in. RO-70 with two separate "Even-Heat" ovens with adjustable shelves and two, high-speed broilers, providing a combined oven capacity of 10,280 cu. in. Other important features include: A triple-duty "Thermizer" cooker with the "Thrift-o-matic" switch, cook-master clock-



Frigidaire Master Series Model AR-76.

control, "Simpli-matic" oven control, and "Radiantube" surface units.

The laundry equipment line features the porcelain finished automatic clothes washer with exclusive "Live-Water" washing action; an automatic electric clothes drier featuring a handy "Heat Selector" permitting heat selection for various types of fabrics; a compact electric ironer that provides foot control operation and a 30-in., sagproof ironer roll with open roll drive.

The line of home freezers is offered in 9, 12, and 18-cu. ft. sizes.

Model No.	List Price	Total Capacity (Cu. Ft.)	Freezer Capacity (Cu. Ft.)	Frozen Food Capacity (Lbs.)	Total Shelf Area (Sq. Ft.)	Total Hydrator Capacity (Gals.)	Size Water Mixer (In.)	No. of Ice Trays Single Double
<b>Imperial</b>								
IR-108	\$509.75	10.8	2.09	73	17.9	28.2	7/8	4s
IR-106	\$448.75	10.6	1.34	47	18.5	25.0	1 1/2	3s
IR-90P	\$434.75							
IR-90	\$399.75	9.0	1.25	44	14.9	20	1 1/2	3s
<b>Deluxe</b>								
DR-114	\$399.75	11.4	1.30	47	21.8	25	1 1/2	2s 1d
DR-97P	\$399.75							
DR-97	\$364.75	9.7	1.26	44	18.0	23	1 1/2	2s 1d
<b>Master</b>								
MR-86P	\$339.75							
MR-86	\$309.75	8.6	1.18	41	16.5	19.2	1 1/2	1s 1d
MR-76	\$279.75	7.6	1.09	38	15.5	9.6	1 1/2	1s 1d
<b>Standard</b>								
SR-88	\$258.75	8.8	.84	29.4	15.7	9.6	1 1/2	2s
SR-78	\$244.75	7.8	.56	19.5	13.7	9.6	1 1/2	2s
SR-60	\$214.75	6.0	.45	15.75	11.7	9.3	1 1/2	2s

## For Every Refrigeration Application

**GM STEEL tubing**

**GM STEEL tubing is**

- ECONOMICAL
- UNAFFECTED BY BRAZING AND SILVER SOLDERING TEMPERATURES
- CLEAN
- DUCTILE
- UNIFORM

**GM STEEL tubing is furnished in**

- PRE-FORMED SHAPES
- STRAIGHT LENGTHS

**GM STEEL tubing is available in**

- SPECIAL COPPER PLATE FINISH that provides, at extremely low cost, sufficient pure electrolytic copper for the most difficult brazing requirements.
- EXCLUSIVE FUSE-KOTE FINISH... a patented process that provides a perfect seal, assures surface protection, offers better electrical welding contact, aids soldering and brazing operations, and improves tool life.
- PLAIN FINISH where no coating is needed.

• The super-heat, condenser, and connector coils shown above are typical examples of how GM small diameter Welded Steel Tubing is being used by leading manufacturers of refrigeration equipment. Manufactured by Rochester Products at the rate of hundreds of miles daily, GM Steel Tubing lends itself readily to all types of fabricating operations—expanding, swaging, perforating, flattening, flanging, beading, crimping and drawing.

**SEND FOR FREE BROCHURE**

"Look Ahead with GM Tubing." That's the title of our new illustrated brochure that tells why GM Steel Tubing is first in the field for lasting quality, adaptability and low cost. Send today for free copy.



**YOU CAN'T BEAT THE VICTOR Refrigerated Rooms For Every Purpose**

- Normal Temperature Rooms
- Zero, Low Temperature Rooms
- Tailor-made Rooms for any required temperature, of any desired size.

For information write:

**Victor**  
MANUFACTURERS OF THE FAMOUS VICTOR QUICKFREEZE  
PRODUCTS CORPORATION • HAGERSTOWN, MD.

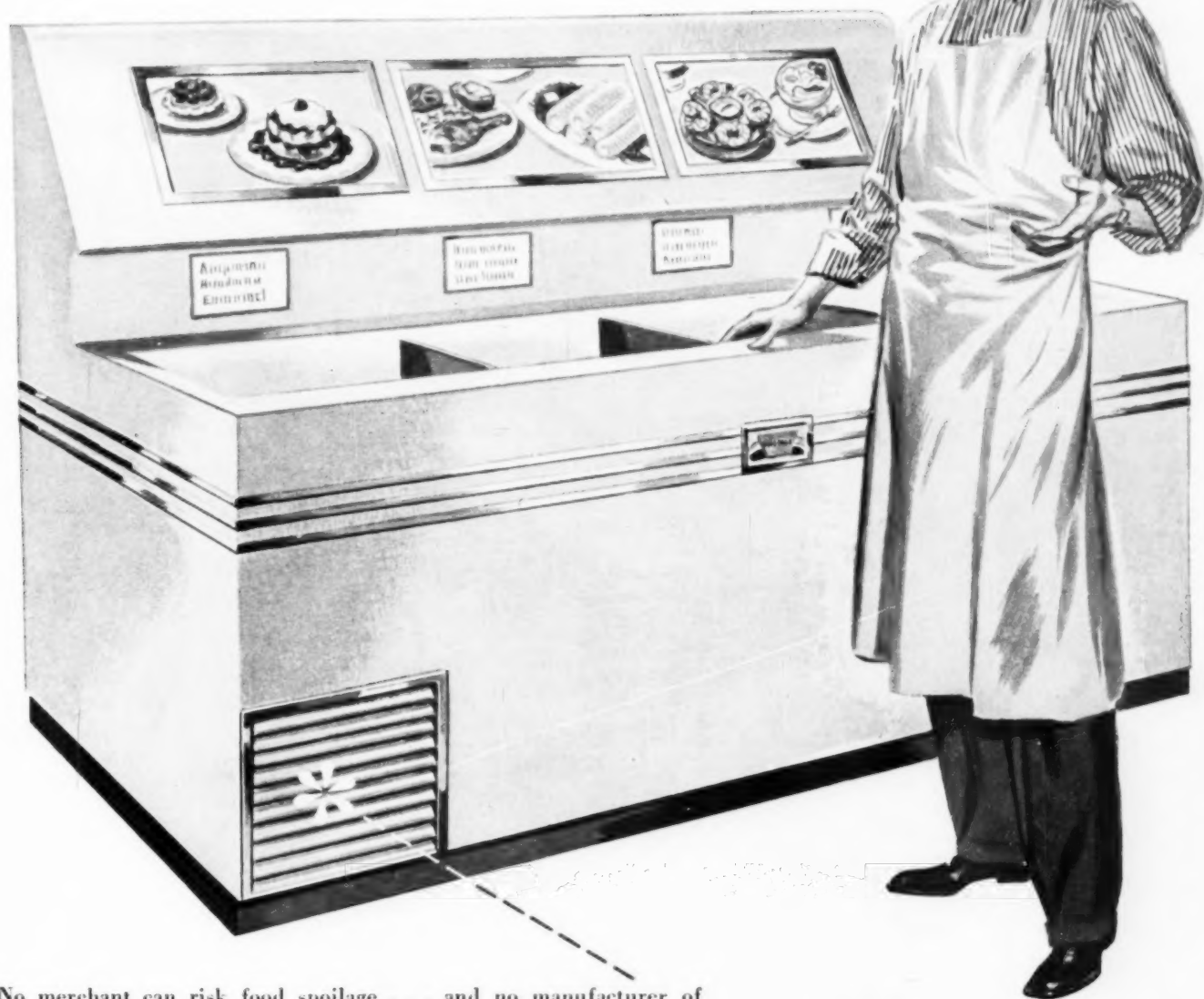
**ROCHESTER PRODUCTS**



DIVISION OF GENERAL MOTORS  
Warren, N.Y., U.S.A.



# "I just can't risk food spoilage!"

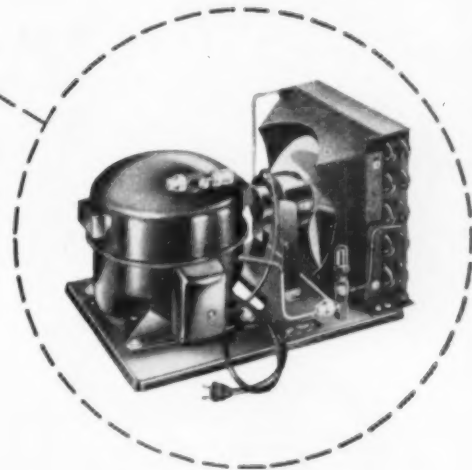


No merchant can risk food spoilage . . . and no manufacturer of frozen food display cabinets can risk using unreliable condensing units in the equipment he builds. That's why the name Tecumseh has become synonymous with dependability, and that is why more than 2/3 of all manufacturers of frozen food cabinets specify Tecumseh as standard equipment on all models they make.

Of course there's a reason! Manufacturers know that Tecumseh's internal spring mounting and forced feed lubrication gives them a smooth, quiet and vibrationless unit that they can rely upon for low-cost, trouble-free operation. Yes, customer satisfaction can be assured when a Tecumseh Hermetic is specified as standard equipment in their frozen food cabinets.

No wonder Tecumseh's present production is over 200,000 units per month, and today there are more than 8,000,000 Tecumsehs in the hands of satisfied users.

Let us send you a catalog today describing these Tecumseh units.



## TECUMSEH PRODUCTS

TECUMSEH, MICH.

*Company*

EXPORT DEPT.: 2111 WOODWARD AVE., DETROIT, MICH.

★ The world's largest producer of compressors and condensing units for the refrigeration industry. ★

**"Tune In" on your greatest profit**

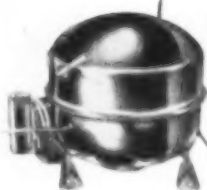
# RCA Room

**Ready Now!**

The last word in better living  
by RCA . . . the name that's a  
"buy word" in millions of  
homes.



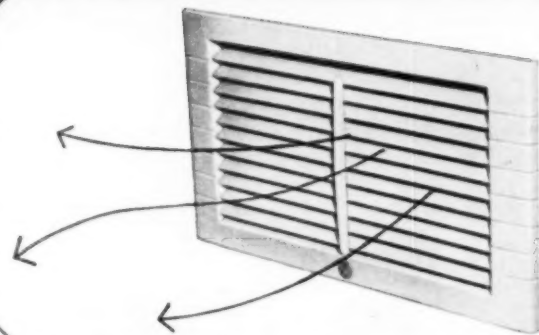
**"75"** —  $\frac{3}{4}$  H.P. — For rooms up to 485 sq. ft.



*"Heart-of-Cold"*  
Compressor

### Top Cooling Capacity . . .

thanks to the RCA "Heart-Of-Cold" Compressor—rated tops in comparative tests. Hermetically sealed. 5-Year Warranty.



### Greater Air Flow . . .

thanks to the new exclusive RCA "Airflow" Grille designed for widest, fullest air circulation to all parts of the room.

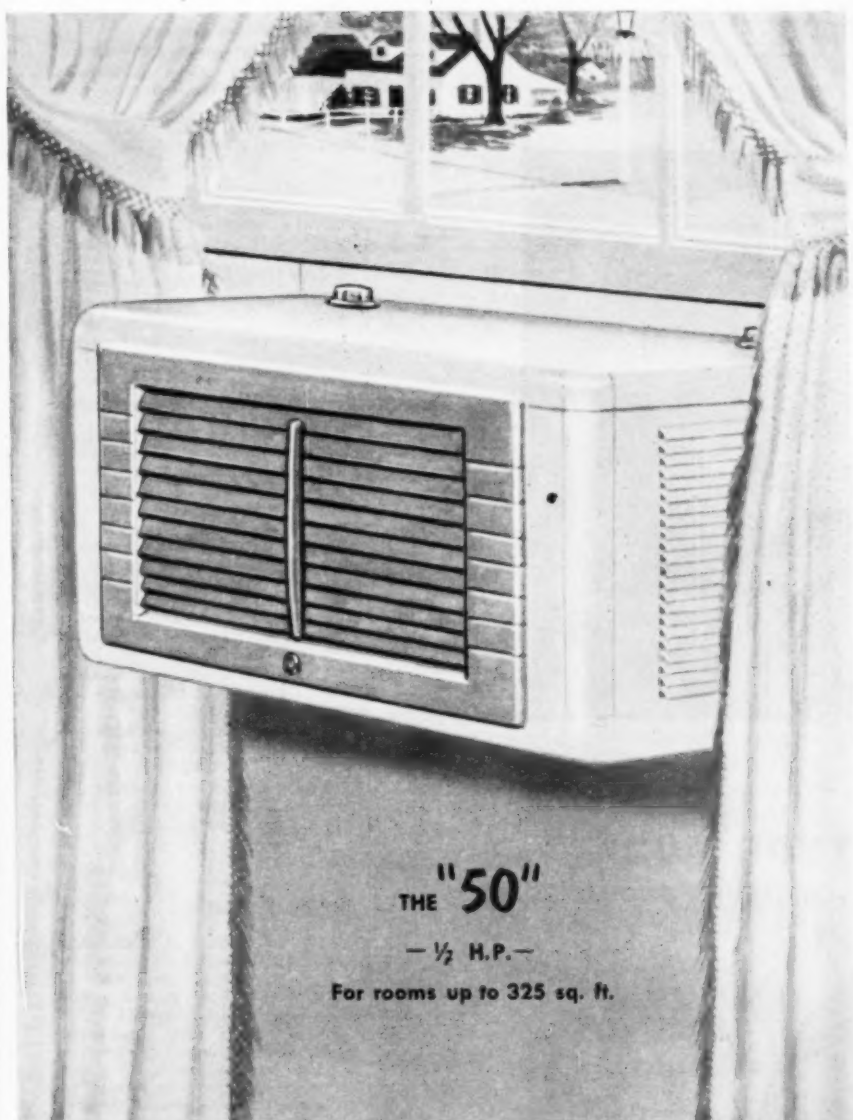


**opportunity since TV!**

# Air Conditioners!

RCA is helping you go after the HUGE untapped market for room air conditioners! With a complete line, handsomely styled, superbly engineered, and aggressively priced to sell. With a complete

range of displays and merchandising helps. With a full-scale national advertising campaign in LIFE and on all RCA Victor radio and television shows.



THE "50"

— ½ H.P. —

For rooms up to 325 sq. ft.



THE "33"

— ½ H.P. —

For rooms up to 230 sq. ft.

## RCA VICTOR DIVISION

RADIO CORPORATION OF AMERICA



*RCA makes your home a better place to live!*



**RCA Factory Service...**

low-cost contract covers installation and service by RCA Service Company, Inc. Full profit! No parts to stock. No service worries.

## INSIDE DOPE

by GEORGE F. TAUBENECK

(Continued from Page 1, Column 2)

### Tit for Tat

"We wives," announced Mrs. Boomer belligerently one morning, "have been talking about going on a strike."

"That's O.K. with me," shot back her husband from behind his newspaper. "I know where I can find a cute little strike-breaker."

### First Things First

"I understand that you're pretty sore at that spouse of yours, Helen," a neighbor said to Mrs. Henpeck one morning.

"I'm just furious," vociferated Helen. "Why, I can hardly wait until I get my hands on his paycheck tonight so that I can tell that dirty skunk off!"

### You Do Grow Older

Passing cigars around the office on the morning after his eleventh child had been born, Pat Paternostre told all his pals:

"Believe me, fellas, this is the last one. Never again. So help me, if we have another, I'll kill myself."

Ten months later Pat was passing out cigars for the twelfth time.

"Thought you were going to commit suicide if you did it again," kidded one of his fellow-workers, lighting the proffered stogie.

Pat looked downcast, and whispered his hang-dog reply:

"Honestly, Joe, I tried to. I had the rope around my neck and everything... and then I said to myself, 'Pat, maybe you're hanging the wrong man.'"

### Imaginary Story

It was about 10:30 one night when Joe Doskes returned a book he had borrowed from his neighbor, Tom Schmoe.

Mrs. Schmoe invited Joe in for a drink. Her husband hadn't come home, she mentioned, and she was lonely. Mighty glad to see neighbor Doskes.

Well, one drink led to another. And the two neighbors got chummier and chummier. At the crucial moment, when Mrs. Schmoe reached up and switched off the floor lamp, the telephone rang.

"Hello-oo-oo," she cooed into the receiver. "Oh? Oh! That's fine, darling. Sure, I'm all right. Now don't you worry. You have yourself a good time and come home whenever you feel like it."

Joe started to leave.

"What's your hurry?" pat-patted Mrs. Schmoe.

"That was your husband, wasn't it?"

"Ha-ha-na-ha," her laugh rang out, free and clear. "Indeed it was. He phoned me to say he wouldn't be home until late because he's playing poker with you."

### The Real Thing?

Mrs. Murphy's husband hadn't spoken to her for three days. He sulked around the house without offering an explanation of what was troubling him.

"Oh, come on, Herman," implored his wife, "at least tell me what you're peeved about."

"Well, all right. I'm mad because the other night you said I was a model husband."

"Goodness, darling," fluttered Mrs. Murphy, "that was a compliment."

"No, it wasn't," insisted Murphy, in an injured tone. "I looked up the word 'model' in the dictionary, and it said: 'a small imitation of the real thing.'"

### Quaker Yarn

Surprised by his wife in the act of hugging and bussing a lissome hired girl, a Pennsylvania Dutchman sternly reproached his spouse.

"Sarah, if thee doesn't stop poking thy long nose where it doesn't belong, thee will cause trouble in our family."

### Man of Few Words

In Wapakoneta, Ohio, a desperate woman filed a bill of divorce against her husband. Her complaint was that he had spoken to her only three times during their married life.

After listening to her story, the judge granted her an uncontested divorce, and awarded her custody of their three children.

### Not So Funny

After seven lean years of wedlock, a long-suffering husband announced that he was getting a divorce.

"But why?" wailed his lazy companion. "Haven't you had the best seven years of my life?"

Groaned the overly patient man. "Were those years your best?"

### Grand Philosophy

Samantha Brown was a hard-working woman who took in laundry and hired out to do housework in order to support her lazy, no-count husband. Sometimes she was chided by her friends.

"Why do you put up with him?" was the inevitable question.

"I ain't unhappy," she'd reply. "I

make the livin', but he makes the livin' worthwhile."

### The Poetry of Motherhood

While driving down a main thoroughfare, Mr. Father Ofsix noticed a sign over a dairy store.

"Acidophilus milk," he read aloud, savoring the words as he pronounced them.

"It certainly is!" agreed his wife in a tired voice.

The class devoted to the study of Reckless Rhythm will now adjourn for extra-curricular exercises.

### Reason for Hope

"Alice," mused her mother, "there's something on your mind. Tell me."

"Oh, mother. You know I can't hide anything from you. I have a confession to make."

"Well?"

"I was tired of my boyfriend. I'm an active, normal, healthy girl, mother. He never took me any place nice. I wanted to dance, see floor shows, taste life. So I advertised in the papers."

"Oh, no, Alice. You didn't!"

"Yes I did, mother. I wrote a classified ad which read: 'WANTED: Mature gentleman who knows his way around to show Life to eager miss.'"

Alice's mother groaned:

"How many answers did you get?"

"That's what bothers me, Mamma. The only one I received came from Dad."

"Jeerusalem!" boomed her mother. "There's life in the old goat yet!"

### Dad Blushed

"Was it awfully cold when you married Mom?" queried the teen-age daughter.

"Why no, honey. We were married in June."

"Then why does Momma shiver every time she mentions her wedding day?"

### This Fable Was Contributed

Having had cocktails at the Astor and dinner at the St. Regis, a salesman figured that his client was ripe for private treatment. So he invited him to spend the night at his home on Long Island.

Both he and the client were shocked, however, when they entered the front door. Shamelessly misusing an expensive needlepoint divan, the salesman's wife was locked passionately in the arms of a man neither of them knew.

"Sh-h-h," warned the salesman. "Let's tiptoe out into the kitchen and get a drink."

After they had coruscated into the kitchen, and were sampling the Scotch, the client ventured:

"Aren't you going to do anything about that bounder who's making love to your wife?"

"Hell, no! Let him pour his own drinks."

### Money Is Money

And that reminds us of the three brothers who married three sisters in a triple ceremony. They were all eager to raise families; but months passed, and nothing happened.

Several years after the triple-header wedding, one of the brothers began to make money in a big way. So he sent his wife to Florida for the winter. Florida seemed to agree with her. Several months later she presented her husband with a fine baby boy.

The following winter Brother No. 2, who was also "in the chips," sent his wife to Florida. And whaddaya know: in due time she gave birth to a son, also.

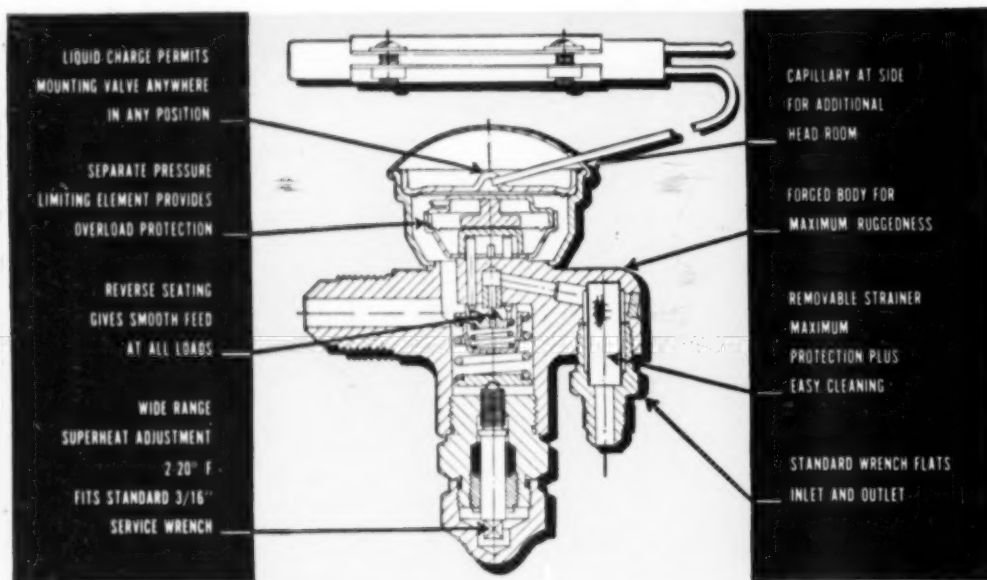
At the christening, the two new fathers were feeling sorry for their brother, who was still without issue. So they put their heads together and made him a proposition.

"Abe," they offered, "we'd like to lend you \$10,000—without interest, mind you. Take this money and send your wife to Florida. Then maybe she'll bear you a son and make you happy like us."

Abe didn't answer. Just sat there, holding his head.

"Whaaaaa matter, Abe? Don't you want to be a happy father, too?"

"Of course, boys. But \$10,000 is a lot of money. Wouldn't it be cheaper to bring that So-and-So up here?"



# ALCO

## THERMO VALVES TYPE 402

FOR SMALL FIXTURES—ENGINEERED FOR SERVICE ENGINEERS

pressure limiting for motor protection

dependable, tested performance

simple, compact construction

wide superheat adjustment

space-saving size



## ALCO VALVE CO.

853 KINGSLAND AVE. • ST. LOUIS 5, MO.

Designers and Manufacturers of Thermostatic Expansion Valves, Evaporator Pressure Regulators, Solenoid Valves, Float Valves, Float Switches.



For price, features, beauty, saleability...

**"This is it"** *say dealers everywhere*

## New NORGE Time-Line Automatic Washer selling like hot cakes!

Is it really that good? Brother, you don't know the half of it! This new Norge is the once-in-a-lifetime miracle that dealers dream about. An appliance so perfectly designed and engineered—so appealingly priced—so packed with features women want—it's proving to be a sales "natural".

Yes, sir . . . this is *really* it! Why wait? You won't know what you're missing if you don't sell Norge!



Not even a dial to set! Housewife merely presses the Time-Line button and the new Norge does the rest. It *automatically* fills with just enough water for any size load—then washes, rinses, spin dries, and turns itself off—*automatically*! User may skip or repeat any part of the cycle because every step is visible *all* the time.

**Tops the field in features.** Actual tests prove that the exclusive Double four-vane agitator in the new Norge provides the best washability in the industry. Other features include *five* warm rinses with agitated *overflow* rinsing, tangle-free spin-drying, plus lower water consumption . . . and a *lower selling price!*



Watch these stars make NORGE the best-known washer in America!



**KATE SMITH**

What Kate says, folks *believe*! On her night-time TV show, "The Kate Smith Evening Hour", see her sell the new Norge Automatic Washer and the entire Norge line in her own sincere way. She's on NBC for Norge every other week in all available TV markets.



**RED SKELTON**

When Red tells 'em, audiences *listen*! And he's now on for Norge in the "Red Skelton Radio Show", promoting the Norge Automatic Washer and other Norge home appliances. The show is broadcast every week in key areas that can't be reached by television.

What a combination! Kate Smith on TV and Red Skelton on radio . . . selling the new Norge Automatic Washer and other Norge home appliances to your potential customers *right in their homes* week after week. It's a big-time advertising campaign that *really hits home*!

And even *that's* not all. Watch for a forthcoming schedule of dynamic, hard-selling magazine advertising that *means business* for Norge dealers everywhere!

*You won't know what you're missing if you don't sell*

# NORGE

THE LINE THAT PAYS OFF FOR THE DEALER!

Canada—Addison Industries, Ltd., Toronto

REFRIGERATORS • GAS RANGES AND ELECTRIC RANGES  
WASHERS • ELECTRIC WATER HEATERS • FREEZERS

## 'Bird Dogs' Earn 5%-10% Commission on Appliances, TV; Quadruple Dealer's Sales

NEW ORLEANS—Radio Center has sold more window air conditioners and television sets than any other dealer in the state of Louisiana, believe the owners, Louis K. Levy and George Marcuse.

Aggressive, and in some respects, unusual merchandising and promotion methods help account for the record claims, which no one has disputed. The store itself is large and modern, and is located on a main highway, but at some distance from the heart of New Orleans.

The firm's 16 outside salesmen do play an important role in rolling up sales, not only by the deals closed outside, but in getting hot prospects into the store where, for example, they can stump 18, yes 16, different makes of television receivers.

"We advertise that we can show them nearly every make from A to Z," comments Levy, one of the partners. "Alphabetically," he explained, "we go from Admiral to Zenith with 12 other makes in between. Among the major appliances we feature such lines as Frigidaire."

But one of the things that's helped this firm chalk up one sales record after another is its extensive use of "bird dogs" to steer prospects to the store.

Actually, however, the 100 or so outsiders that do this for Radio Center are somewhat more than the usual "bird dog"; at least when it comes to being compensated for their efforts. Instead of the \$5 or \$10 bill

the average person working under such an arrangement receives when a friend or acquaintance buys an appliance on his recommendation, those connected with Radio Center receive a substantial 10% on white goods and 5% on television sets.

"How can we lose," Levy says. "The only cost to us is printing up the cards these people use. They're not on a salary or drawing account. Every sale they develop is, except for their commission, clear profit to us."

Soon after the idea was initiated, the part-time salesmen helped quadruple Radio Center's annual volume, and some of the bird dogs, working approximately two hours a day, have earned as much as \$150 to \$200 a month.

Here's how the plan works:

Each person who's interested is assigned a number, his name and number going on the dealership's books. He is given a pack of Radio Center business cards which have a blank where he can fill in his number. Now if the part-time salesman cannot bring the prospect into the store, he gives the card with his code number on it and asks the prospect to bring it to the store.

In either event, when the prospect gets to the store, Levy or Marcuse attempts to complete the sale. None of the regular commission salesman has to spend his time on these prospects. If the sale goes through, the "bird-dog" gets his commission.

"Most of these individuals are people who were, and still are, regular customers of our store," Levy explains. "We've mostly used persons who come in contact with a lot of people. On our list we have milkmen, newspaper route collectors, meter readers, telephone repairmen, insurance salesmen, cab drivers, cleaners' delivery drivers, and the like."

"None of them is restricted in his territory, and although we once tried to give them some special training so they'd know our lines and have some basic ideas on selling appliances, we have since pretty much given up the training classes."

"While they do account for a great many sales, their activities are so sporadic that it doesn't pay to do much training, we've found. Some of these people may go for several months without sending in a prospect, and then have several sales all at once."

"Naturally, we don't require that they sell a minimum number of appliances in a year, say, to stay on our list. Whatever sales result from their activity is gravy for us, so we can't lose."

### Electric Assn. Elects Officers

KANSAS CITY—John D. Hilburn of Boese-Hilburn Electric Co. was elected president of the Electric Association here at the group's recent annual meeting.

Other new officers are C. E. Barnickel, Jenkins Wholesale Div., vice president, electrical appliance wholesalers; Gale Curtright, Barnard's, vice president, electrical appliance dealers; and C. P. Haas, General Electric lamp department, vice president, electrical manufacturers division.

## RCA Names Ad Agency For Air Conditioning Line

CAMDEN, N. J.—The Al Paul Lefton Co., Inc. has been engaged to assist in the preparation and placement of advertising and sales promotion for the new line of RCA Victor air conditioners. It was announced recently by R. H. Coffin, the company's director of consumer products advertising and sales promotion. The agency has headquarters in Philadelphia and offices in New York and Chicago.

An advertising campaign involving national magazines, newspapers, radio, and television is now being prepared. Details will be announced in the near future, Coffin said.

The Lefton agency handles the advertising for the RCA Service Co., and also for Raymond Rosen Co., Inc., RCA Victor distributor for Philadelphia and vicinity, and through these associations has become well versed in RCA policies.

The new RCA Victor line of air conditioners is currently being shown by distributors to dealers. The line consists of three models, priced from \$249.50 to \$299.50. They are designed for installation in windows and to service rooms with floor areas ranging up to 485 sq. ft. Initial shipments to distributors will be made before the end of January.

## Robert Oliver Named W-E Merchandising Counselor



Robert M. Oliver

MANSFIELD, Ohio—Appointment of Robert M. Oliver, veteran appliance industry figure, as merchandising counselor for the Westinghouse Electric Appliance Div. was announced by T. J. Newcomb, sales manager. Oliver succeeds the late Vernon E. (Sam) Vining.

The merchandising counselor was with the Westinghouse appliance division from 1936 to 1940 in various advertising and sales work posts, and in 1940 went with Procter Electric Co. where he was a vice president and director.

He left Procter in 1949 and went with Landers, Frary & Clark Co. as general merchandising manager in charge of the electric housewares division. He resigned this post in September, 1951, and took on his new duties at Westinghouse this month.

Oliver has been chairman of the National Electrical Manufacturers Association's sales promotion committee on electric housewares.

## York Defense Contracts Supply Special Refrigeration, Air Conditioning Equipment for Aircraft Research

YORK, Pa.—Stewart E. Lauer, president of York Corp., revealed recently that his firm has begun work on two contracts, totalling well over \$2,000,000. These contracts involve very special and unusual machine tools for vital aircraft production.

Execution of the contracts has been assigned to the West York plant.

"In addition," Lauer said, "York is furnishing substantial amounts of air conditioning and refrigeration equipment for the Armed Forces and defense supporting industries engaged in vital, and sometimes top secret, defense work."

"New developments in aviation, particularly in turbo and ram jet fighters as well as guided missiles, have increased the demand for highly specialized air conditioning and refrigeration equipment. These continued developments in aviation have placed a great challenge before our industry."

"During World War II the Armed Forces thought in flight ceilings of 65,000 ft., but today they are thinking in terms of flight ceilings of 150,000 ft. where temperatures below -67° F. (usual stratospheric temperature) exist."

"To obtain planes capable of top performance and supersonic speeds at such altitudes, new type factory and field fabricated enclosures, wind tunnels, and make-up air systems are now being sought for aerodynamic, material, and environmental testings."

"In the main, World War II test facilities simulating stratospheric conditions and aircraft climb rates of 5,000 f.p.m. are now inadequate. To keep pace with the rapid developments in aviation, our development and research engineers are continually seeking ways and means of developing new test enclosures which play a vital role in making these developments possible."

**KEEP IT QUIET!**

**Servel**

**STANDARDIZE ON SUPERMETIC FOR EVERY COMMERCIAL REFRIGERATION AND AIR CONDITIONING INSTALLATION**

**WRITE—RIGHT NOW FOR FREE MANUALS**

New sales literature and installation instruction materials are yours for the asking. Write for your copies today to the address below.



There's no secret about the continued smooth, quiet operation of the Servel Supermetic. It's planned performance—precision fitting of all parts... complete and constant forced-feed lubrication... flexible, vibration-resistant mountings—that guarantee long years of trouble-free service when you install a Servel Condensing unit. And the same holds good throughout the Servel hermetic line—from the smallest 1/2 H.P. model to the top-size 5-H.P. unit. That's why Servel backs up the Supermetic with a low-cost 5-year Protection Plan.\* That's why you will keep the customer sold on every job you sell—by standardizing on Servel.

\*Servel's low cost 5-year factory warranty is available on all steel-case models up to 1 H.P. Other models warranted 1 full year.

**LOOK** no other water valve has all these features

- No Water Hammer
- Highly Sensitive to Refrigerant Head Pressure
- No Sticking of Seats
- Easy Manual Flushing
- Eliminates Rusting of Range Spring
- No Corrosion or Sedimentation on Sliding Parts

The PENN Series 246 water valve can really "take it" and continue to give top performance. That's why more and more refrigeration men specify PENN... they know it's "tops" on every job. If you haven't tried it... do it now! Ask your wholesaler or write Penn Electric Switch Co., Goshen, Ind. Export Division: 13 E. 40th Street, New York 16, U.S.A. In Canada: Penn Controls, Ltd., Toronto, Ontario.

**PENN** AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES

SERVEL, Inc. Electric Refrigeration Division, EVANSVILLE 20, INDIANA



# WAIT!

until you see  
the sensational  
new refrigerators



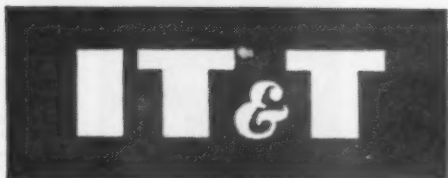
by **COOLERATOR** and **IT&T**

Don't stock up—yet! Don't settle for a lesser line of refrigerators until you see these new engineering triumphs by Coolerator and IT&T. Completely new from the ground up, they have all the features to make them *easy to sell*—*perfected* automatic defrost, separate or inner-door freezer chests, tip-up shelves—just to mention a few. And they're gleamingly beautiful—inside and out!

The wraps are coming off *this month*—February 22. See your distributor for details. Get in on the ground floor with this profitable line.

Write to The Coolerator Company, Duluth 1, Minnesota.

Ask about a Coolerator franchise now!



REFRIGERATORS, FREEZERS, RANGES

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION  
67 Broad Street, New York, N. Y.

## Radio as a Salesman

### 10 Points on How To Make Radio Spot Announcements Pay Big Dividends; Good Copy Can Be Difference Between Profit and Wasted Dollars

By Henry S. Galus, Station WBSM, New Bedford, Mass.

In 1948 the refrigerator dealer's radio budget joined other Main Street broadcast expenditures to pile up a phenomenal \$170,000,000, which was about 15 million over the earlier predictions of experts. When all "local" reports are compiled for 1949 by the official NCC, it's believed retailers will have spent closer to \$180,000,000, and, for 1950, about \$20,000,000 higher!

Somebody's making money from radio. Does it include you? Or, in the face of some 45,000,000 families owning 95,000,000 sets at close of 1950, are you convinced that radio today doesn't induce many folks to thaw your cash register back into rapid action?

There are three kinds of refrigerator men: (a) those who are praising radio for its undeniable pulling power, (b) those who gave radio a "fair trial" and divorced it, certain its worth is nil, (c) those who are sticking to radio for the blind, fearful reason that it just may be pulling in some customers—but nobody's sure about it.

Experience provides basis for suspecting that these latter two dealers have failed with radio, or are wasting a good part of their budget on it, through a lack of knowing what the fundamentals of good copy usage are. Let's pause momentarily to re-

mind that the power of radio lies in the spoken word; it's a perfect substitute for a human clerk. But a clerk is only as good as what he says, how and when! The shopowner talks away his money if his copy is wrong or is used incorrectly—if he commits the Major Dollar-Wasters:

1. Don't confuse listeners with a jumbled mass of prices! You wouldn't think of ripping off your storewide price list while confronting a prospect for just one minute. Then how can you expect a radio listener, that potential customer, to evaluate the bargain factor of any one of your myriad products of services in a 60-second flurry of figures?

Remember, few of us can assimilate readily more than five or six figures heard in rapid succession. Don't exceed this price number in your minute spot.

Regardless of the time-length you buy, as five minutes of news, music, or up to an hour, you still get only 60 seconds of salestalk at any one time! If you use 30-second station-break spots, confine yourself to a maximum of two prices; in 15-second spots, only one.

2. Don't jam your copy with too much inventory that is, don't state prices for every new refrigerator for homemakers or meat case for food merchants. The National Asso-

ciation of Broadcasters, whose surveys of every field are aimed at improving results, reveals that the smart shopman will select only 30% of his stock and services for incessant plugging—those most desired by most people most of the time!

Work out this formula in step with timeliness and seasonality where possible. Give your copywriter a chance to "milk" your product or service for all its motivating (buying) elements. Do this for that select 30% and you'll successfully affect the remaining 70% through increased traffic and tie-in sales.

#### Don't Switch Messages

3. Don't switch your sales message in the middle of the desire-buildup stream! The wide-awake dealer knows that repetition means advertising effectiveness. (How does propaganda work?) Repeat and repeat! You can't expect the housewife to fall for your pastel refrigerator-refinishing service the first or second time she hears about it. Not the majority of housewives, anyway.

Each time you mention it, though, her interest is being kindled to the point of reaction. If at the climax of this desire you suddenly switch to a description of a defroster, let's say, you actually cheat yourself because you knock the legs from under the

desire she's been developing for that pastel job.

4. Don't abuse listener-intelligence! Too great reductions in price, "sacrifices," and that sort of claim are beginning to bounce off the customer's ears these days. Overuse has killed the plausibility; people just aren't that gullible, and they will resent your trying to impress them that your sole purpose for staying in business is to suffer losses for humanitarian reasons.

Be conservative in your claims and you'll win respect. It's much wiser to have customers saying of you, "Blank's is a sound, healthy business, not a fibber whose word you can't trust."

#### Like Tallulah's 'Darling'

5. Don't employ worn-out slogans; they will not adequately distinguish your business from others—and distinction is the real reason for sloganizing anything. "Top Quality at Rock Bottom Prices" seems to be a pet with amazing numbers of retailers and servicemen. Like the "darling" used by Tallulah Bankhead, it's absolutely meaningless.

But create even the slightest variation on it and you've got something. Make this variation fit your service policy and store name as closely as possible. Without strain, for example, you can twist the above to say, "Where Refrigeration Dollars Meet Warm Friends." Keep your slogan short, to the point. And stay with it!

6. Don't buy "just any old time" on the air! Best time is that at which purchasers of your special product or service will be tuned in, obviously. Yet too many dealers go on disregarding this prime promotional rule.

Women, who spend 85% of the family budget, are excellent daytime listeners. Talk to husbands and businessmen at mealtimes and evenings. Evenings are also ideal in cases where special sales depend upon your getting family-type discussions. If it's a one-minute spot you're using, try to sandwich it between, or slip it into, shows specifically appealing to listeners most likely to convey interest for your offer. You can gauge this closely by station statistics which should be available to you.

#### Choose Your Spot

7. Don't present the wrong type of program! You can make the mistake of being choosy about time and still fall flat on programming. Simply buying five minutes of something or other at the "ideal woman's hour" isn't the final answer to successfully promoting a home freezer line.

Mrs. Jones has her radio on at 10 a.m., yes, but she can easily ignore your five minutes of dry chatter, discussion of the arts, sports news, book reviews, and such of limited housewife-appeal. For example, while 65% of female listeners enjoy daytime newscasts, only 6% go for sports-casts.

Suppose you're plugging Fresh-Freezer Display Cases? Well, you'll catch more male merchants listening at night; mostly, according to na-

tional figures, to news, comedy, quiz shows, popular tunes. Just remember—put on what customers like, and you won't waste air time or money.

8. Don't use too little time! This may sound like a plug for radio. But forget radio for the moment and apply this factor to any promotional medium. Competition can only be "met, matched, murdered" by enough ambition and action. Study the ad frequency of your nearest competitor and go on at least as many times with presentations of equal or better calibre. But separate yourself from a proximity to Mr. Competitor's spots or you'll be stuck with a conflict of appeals.

You'll be smart, also, to demand that the radio station keep your announcements at safe distances apart from other retailers who, though outside the refrigeration field, sell items related to yours.

9. Don't go "long hair" on your audience! This is usually done in the delusion that you can win prestige for your business. But such an idea argues with the fact that radio is a mass market medium, as are newspapers. Informal, unstilted conversational language is the only suitable radio slang, both interesting and easily grasped by anyone.

#### Be Specific

10. Don't generalize! Be specific about the advantages of your service or product. A statement like "gives you more for your money," is valueless, unimpressive, if left alone. You inflame buy-type desire when you give the facts together with promises.

Why will an ABC home freezer give the housewife greater economy? "ABC home freezers give you 30% more storage space in over-all size of ordinary freezers. Yet you pay nothing extra for all that extra space. You buy more food when price is specially low and just tuck it in your new ABC!" Why does the ABC save her work? Don't just say it does! Tell about that timed, automatic switch that starts ABC's self-defrosting trick.

Be sure to dissect your product or any service for its full measure of persuasive elements, the facts. Without a set of facts, your copywriter can only generalize; he can't convince solidly.

Radio can track down dollars if the refrigeration shop keeps its technique on the right side of the tracks!

#### Testimonial Dinner Held For Earle Poorman of G-E

MIAMI BEACH, Fla.—A testimonial dinner to honor Earle Poorman on his contemplated retirement from the managership of General Electric Appliances Inc., New York Branch, was tendered him recently by 300 New York G-E major appliance dealers and their wives.

A purse was presented to Poorman as a token of the dealers' esteem and appreciation, with the request that the "Skipper" use it towards the purchase of a Floridian yacht for his new Sarasota home.



## About to Make a Tubular Part?

If the new product you are asked to make is tubular, let us suggest an efficient way to fabricate it. Instead of "starting at scratch" to build it, utilize tube as your basic form and continue your fabrication from that point. Much of your problem is thus simplified and the resulting product can be made faster, more economically, and, in many cases, better. This has been demonstrated time and time again.

Of course you could carry on a series of trial and error experiments yourself and perhaps come up with something acceptable. But today we all must arrive at solutions without waste of time. The essential things must be produced quickly. Avail yourself of the vast experience we offer through our Customer Engineering service. As producers of tube exclusively for over 35 years, Wolverine is in a position to give you valuable help in matters dealing with efficient fabrication of tube and its proper installation.

#### WOLVERINE TUBE DIVISION

Calumet & Hecla Consolidated Copper Company

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*America's Finest* FARM & HOME FREEZERS

Guaranteed by Good Housekeeping

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**ROP**

\*NOTE—92% of all freezers sold are in BEN-HUR Freezer sizes! Ask your Ben-Hur Distributor, or write for Franchise story. BEN-HUR MFG. CO., Dept. AC 634 E. Keefe Ave., Milwaukee 12, Wis.

**BEN-HUR** FARM & HOME FREEZERS  
HEALTHFUL LIVING THROUGH FROZEN FOODS



## Lawyer Tells Servicemen When They Can Remove Repaired Motor for Failure To Pay

By George M. Hanning

DETROIT—Does a serviceman who has repaired a customer's motor and reinstalled it in the customer's refrigerator have the right to remove the motor if the customer cannot pay the bill?

The legal answer to that question and some others that often face servicemen on the job were offered to the local chapter of the Refrigeration Service Engineers Society here by Roy Hestwood, local attorney.

Speaking before the group at its December meeting, Hestwood advised that if the motor in question is the personal property of the owner, rather than real property, the serviceman would have the right to remove it if the understanding was that he was to be paid for it when it was installed and if he had not unconditionally released his lien upon it.

### 'MECHANIC'S LIEN'

He pointed out that under Michigan law a tradesman has a lien on any property brought to him for repair for the amount of the repairs until he has been paid for his services. This is called a "mechanic's lien." The tradesman loses this lien as soon as he delivers the property and unconditionally gives it up.

In the case cited above, the serviceman had delivered the property and had installed it in the customer's refrigerator on the understanding that he would be paid immediately after it had been installed. However, when it was installed, the customer said he could not pay at the time and asked for credit for 30 days or until the first of the month.

If the serviceman does not want to extend the credit, he then is within his rights to remove the motor and keep it until the bill is paid. However, if he agrees to the credit transaction and leaves the motor, he has released it unconditionally and cannot thereafter regain it.

### WRIT OF REPLEVIN CAN BE SECURED

Hestwood said that in case the customer became belligerent about the matter and refused to let the serviceman remove the motor, the serviceman could get a writ of replevin to repossess the motor. He could charge to the customer the cost of getting the writ, the cost of the constable, and the attorney fees.

Hestwood noted, that if the serviceman removed the motor, he could get the amount of the repair bill from the customer, but he might have trouble collecting for the extra labor involved in installing and removing it.

Hestwood advised that if the serviceman is selling the customer a new motor, he holds a tradesman's lien on the motor until the motor is paid for. If he is forced to repossess it, he can sell it at any time. But if he repossesses a customer's motor that the customer brought to him for repair, he must hold it for nine months before he can sell it for his costs.

### IS IT SAFE TO DEAL WITH OWNER'S AGENTS?

Another problem that servicemen often run into, Hestwood went on, is the problem of whether or not a caretaker, manager, or other person acting as an agent for the owner has the authority to order repair work done.

The safest thing to do, he said, is to contact the owner and find out whether the agent has the authority to order the work requested. If the agent acts within his authority, the owner is responsible for payment, but if he acts outside his authority, the owner cannot be held responsible.

Generally, he said, the serviceman should check the authority of such

agents as caretakers and servants in private homes. But in the case of managers of stores, he is within his rights to assume that the manager has the authority to order repairs to the equipment under his charge. However, when the repairs will run into a considerable sum of money, it might be best to check with the owner to make sure that the manager has sufficient authority to cover such a major repair.

### ADVICE TO SUBCONTRACTORS

Hestwood advised service firms that act as subcontractors, if they have any doubts about getting their money, to notify the owner within 15 days of the time they deliver their first materials that they are a subcontractor delivering those materials. Otherwise, the owner cannot be held responsible for delivery of materials he knew nothing about.

## Mueller Brass Acquires Valley Metal Products

PORT HURON, Mich.—Fred L. Riffin, Sr., president of Mueller Brass Co., announced the purchase by that company of all outstanding stock of Valley Metal Products Co., Plainwell, Mich.

The new subsidiary will operate as a division of the parent company although retaining its own trade name of VAMPCO.

Valley Metal Products is engaged in the manufacture of aluminum windows for residential, institutional, and commercial buildings as well as the extrusion of aluminum into special shapes. Present plans, as announced by Riffin, call for a continuance of the business as it is now being operated.

Tyler Riffin has been named executive vice president of the VAMPCO division. Donald O. Stiles, present general manager, is to remain in that capacity. Other officers of the new subsidiary are identical with those of the Mueller Brass Co., it was explained.

## NLRB Rejects Union Petitions for Separate Labor Units To Cover Service, Installation

WASHINGTON, D. C.—Petitions filed by Local 420, United Association of Journeymen & Apprentices of the Plumbing & Pipefitting Industry, AFL, for separate units of refrigeration installation and service employees at the Philadelphia plants of Abbotts Dairies, Inc., and Philadelphia Dairy Products Co., Inc., have been dismissed by the National Labor Relations Board.

The board found the units sought "inappropriate."

At the hearing, United stated that if the board found such separate units inappropriate, it was willing to represent the employees in those classifications at all the plants and facilities of five Philadelphia employers on a multi-employer unit basis.

In addition to Abbotts Dairies and Philadelphia Dairy Products, the other employers listed were Bordens Ice Cream Co., Breyer Ice Cream Co., and Supplee-Willis-Jones Co.

The board concluded that the re-

frigeration cabinet employees do not constitute a craft to entitle them to severance from an over-all unit.

"We likewise find without merit," the board said, "the alternative contentions of United that these employees are entitled to separate representation because of the craft-like nature of their work and their strict departmental organizations."

"The employers, as a consequence of the seasonal nature of the work, follow the policy of the transfer between departments."

"The record indicates that during the busy summer seasons, refrigeration cabinet utility men are temporarily transferred to production work, whereas in the slack season, production employees are assigned work in the cabinet department."

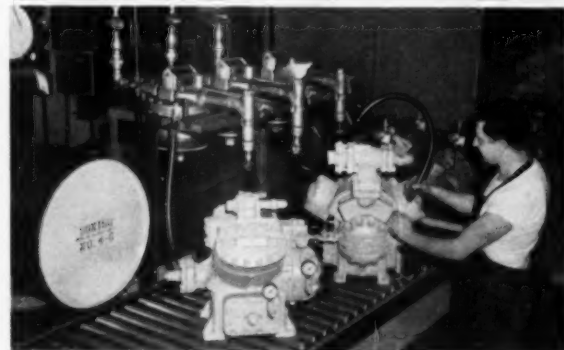
"The system followed by the employers of permitting plant-wide bidding for available jobs served further to demonstrate the mobility of the employers' work forces."

## MANUFACTURERS' CHOICE OF SUNISO PROVES IT BEST FOR SERVICEMEN

Their Technical Staffs Have Confirmed the "Job Proved" Quality of Suniso Refrigeration Oil



**A 10-YEAR TEST** of two compressors run on Suniso Oil was recently completed by an important maker of domestic compressors. Careful examination showed all cylinders, connecting rod bearings, pistons and valves to be good as new after approximately 80,000 hours' operation. And no gum or sludge had formed.



**SUNISO ENDS SUBZERO WAXING.** Several years ago one of the leading companies making large industrial compressors found that its refrigeration oil was "waxing out" at low temperatures. It then ran tests on a variety of competitive oils. Its exhaustive laboratory analyses proved that when used with Freon, Suniso had a lower wax separation point than any other oil. The company has used Suniso for eight years with complete satisfaction.



Genuine Suniso is available to the service trade through authorized Kelvinator Dealers, and wholesalers supplied by Virginia Smelting Company

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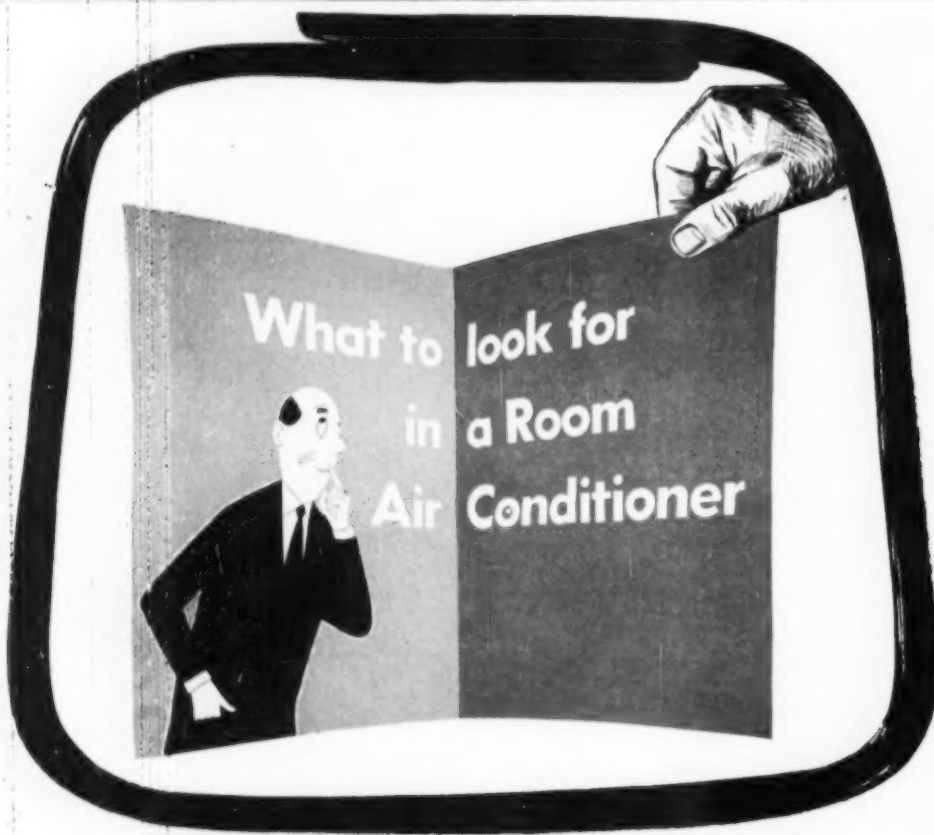
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## They'll Do It Every Time . . . . By Jimmy Hatlo



## Do You Have 'Both Feet On The Ground'?



*turn the page to profits*

Here's the wonderful new Buyer's Guide that every Carrier dealer will have soon. It tells a customer how to get more for his money in a room air conditioner. It gives him 18 points to look for before he buys.

## IT'S A TRAFFIC-PULLER

It's a terrific book. And we're telling the public about it in national publications like *Time*, *Newsweek*, *Business Week*. So there are going to be a lot of people, a lot of interested people, waiting to see it.

## IT'S A SELLING TOOL

It's a book that builds sales. In nice, simple, primer fashion it tells your customers what a good room air conditioner should do. And then it tells them why Carrier Room Air Conditioners do it best.

That is why 1952 is going to be a wonderful year for everybody who sells Carrier Room Air Conditioners—built by the people who know air conditioning best.

**Carrier**

AIR CONDITIONING  
REFRIGERATION

"Look ahead when you buy air conditioning."

That's the theme that introduces the new 1952 Carrier Weathermaker Air Conditioner. It's a sales approach that goes right to the prospect's heart and checkbook. It's good to be a Carrier dealer!



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Published Every Monday by BUSINESS NEWS PUBLISHING CO.  
450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924.

Subscription Rates: U. S. and Possessions, Canada, and all countries in the Pan-American Postal Union: \$5.00 per year; 2 years \$9.00. All other foreign countries: \$7.00 per year. Single copy price, 20 cents. Ten or more copies, 15 cents each; 50 or more copies, 10 cents each. Please send remittance with order.

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VOLUME 65, No. 5, SERIAL No. 1,194, FEBRUARY 4, 1952

"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—Charles A. Dana.

## Hard Work Supports Boom In South

"SAVE YOUR Confederate money, boys. The South will rise again."

That song achieved considerable popularity below the Mason and Dixon line a few years ago, and proved amusing to many in the North. But don't laugh, friends. The song-writer may be right yet.

Considering the downward trend in the dollar's purchasing power over the past years, it might eventually be on a par with that currency issued nearly a century ago by the Confederacy.

And as for the South's resurgence, the composer was making a safe bet. It was already under way some years ago and has now reached a surprisingly fast tempo.

A recent trip through the South also revealed that the air conditioning and refrigerating industry is actively participating in this boom. This is logical, for the South should offer a sizeable potential market for our industry.

It must be admitted that some of the success of our industry as it operates today depends on the weather. A summer hot enough to make thermometers "blow their tops" means sales of many air conditioning units; service calls at all hours of the day and night, and the immediate replacement of worn-out equipment that simply fails under the strain.

On this score the South has a considerable climate advantage. Not only do temperatures soar in the summer; the summer is much longer. As a consequence the South should be a natural for refrigeration and air conditioning dealer and contractors.

In order to make a sale, however, there must also be prospects who have money and or credit. The South is making rapid gains.

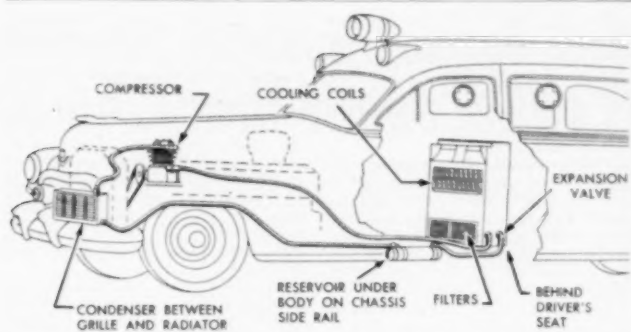
More and more industries are thriving there. Many have been started up locally while others represent assembly or manufacturing plants for national concerns. Government spending also helps, but regardless of the cause, business is booming in the South, as a brief discussion with any businessman will readily reveal. In fact, talking with refrigeration and air conditioning dealers there is a refreshing and encouraging experience.

Are these dealers merely riding the boom? Definitely not. They're helping create it. It proved difficult recently to find a dealer in his store in most southern cities—he and his salesmen were usually out making calls.

Failure to make contact with dealers is discouraging to a business paper writer, but our representative was much heartened to observe they were working so hard to get business. If you make enough calls you're certain to make enough sales.

Too often this fact is ignored, but it appears obvious that contractors in the South have not forgotten that it works and works well.





AMBULANCE made by Superior Coach is air conditioned by means of the system shown schematically above.

## Air Conditioned Ambulance

Kool-Kar System Provides Traveling Patients with Draft-Free Temperature and Humidity Control

BIRMINGHAM, Mich. — Patients being rushed to hospitals, or going from city to city, or perhaps merely coming home can now be assured of a more comfortable ride, thanks to the air conditioning system developed for ambulances by the Kool-Kar Co. here, manufacturer of automobile conditioning units.

Already a considerable number of air conditioned ambulances using Kool-Kar units have been put on the

road by two major manufacturers of ambulances—the A. J. Miller Co. of Bellefontaine, Ohio, and Superior Coach Corp. of Lima, Ohio, according to Kenneth Whitlock, head of Kool-Kar.

### ADVANTAGES CITED BY AMBULANCE MANUFACTURERS

In citing the advantages offered by such air conditioning, the Miller company tells prospective ambulance purchasers: "Your utmost concern for the clientele you serve is convenience and comfort regardless of their demands are for long trips, hospital removals, or emergencies. To render this expected service, the rear compartment of your ambulance must have draft-free fresh air, comfortable regulated temperature.

"The air conditioner is capable of lowering the temperature from 12° to 15° and at the same time reducing the humidity. This you will agree is conducive to patient comfort along with the other extreme of heated air during inclement seasons, making for year-round comfort."

Similar views are expressed by Superior Coach: "Refrigerated air is as essential to patient comfort as heated air. For the best of service, your ambulance should provide comfort all-year-round."

Capacity of the system designed by Kool-Kar is 2 to 2½ tons using a two-cylinder compressor or 3½

tons plus with a four-cylinder unit, Whitlock says.

### COMPRESSOR MOUNTED ON MOTOR

Compressor is mounted on the motor of the ambulance, being driven by a double pulley off the fan belt of the engine. Air-cooled condenser is installed between the front grille and the car radiator.

The air-handling unit itself, including the evaporator, expansion valve, blowers, and filters, is in a compartment located directly behind the driver's seat.

Two blowers, each rated at 250

c.f.m., discharge most of the air through two directional grilles on the top of the medicine cabinet. Two small grilles direct some of the conditioned air forward into the driver's compartment, explains Whitlock, producer of the unit.

"Plenty of fresh air comes in the front compartment through leaks around the doors, windows, and body. Likewise, similar leaks in the rear compartment occupied by the patient are sufficient to exhaust the air pulled in."

### Miami Beach Hotel Cooled

MIAMI BEACH, Fla.—Among the many improvements at the Grosinger-Pancoast hotel here, which will open for the 1951-52 season Dec. 11, are the newly air conditioned dining room and cocktail lounge.

## SLANTS on Service

### Methyl, 'Freon' Systems

#### Need Low Moisture Level

Less moisture is required to form acids in refrigerating systems containing methyl chloride or "Freon-12" than in systems charged with sulphur dioxide, states John Bopp, chief chemist of Ansl's refrigeration research.

Corrosion level for methyl chloride and "Freon-12" is 0.05% by weight moisture, whereas sulphur dioxide requires 0.1% moisture by weight.

### Correct Cause of Trouble

#### Before Replacing Parts

"The prime factor in the reduction or elimination of call-backs on service calls is to train servicemen to analyze the cause of failure and correct the real reason for failure rather than just pressing a reset button or replacing the defective part," emphasizes T. A. Williams of Worthington.

Unless the basic cause of failure is remedied, the replaced parts will frequently be damaged as the original parts were.

"The serviceman should be trained to ask WHY," says Williams. Why did the valves break? Why is the compressor kicking out on the overload relays? Why did the hermetic compressor burn out? Why did the system slug 'Freon'? Why did the compressor slug oil?

## TYPHOON

Specialists in Packaged  
AIR CONDITIONERS  
1½ to 20 TONS

Evaporative Condensers  
3 to 20 TONS

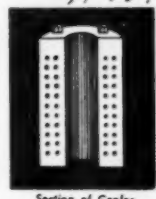
Backed by more than 40 years  
of air cooling experience

TYPHOON Air Conditioning Co., Inc.

794 Union Street, Brooklyn, N. Y.

## HEAVY DUTY LIQUID COOLERS

*Cool water... lots of it*



Section of Cooler

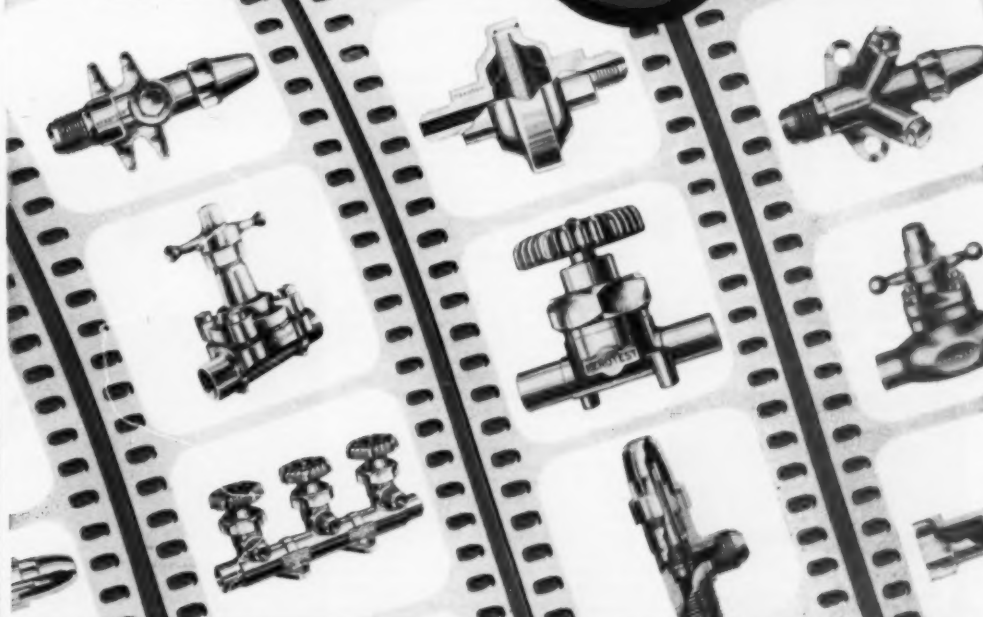
A liquid cooler of high capacity, simply constructed with separate liquid and refrigerant coils cast in aluminum blocks. The great strength of the casting eliminates freeze-up damage while the mass of aluminum provides sufficient holdover to prevent short cycling. Ideal for bakeries, bottling plants, processing applications, circulating chilled water systems, mess halls, cafeterias. Write for specifications and application data.

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EXTRA VALUE FEATURES  
FOR YOUR MONEY  
IN EVERY REFRIGERATION NEED

**KEROTEST**



*Always greater value*

*at no extra cost!*

SEE YOUR

**KEROTEST**

WHOLESALE

KEROTEST MANUFACTURING CO.

PITTSBURGH 22, PENNSYLVANIA

## What To Do About Trade-Ins

# Importance of Replacement Selling Increases as Refrigerator Market Reaches 80-85% Saturation

CHICAGO — With refrigerator saturation now in excess of 80 to 85%, the operation of a profitable appliance dealership will depend to a large degree on the ability of the dealer to handle replacement selling on a sound basis.

That opinion was expressed by H. L. Travis, Kelvinator western regional manager, at the recent annual convention of the National Appliance & Radio Dealers Association.

Replacement selling as an increasing factor in a successful appliance operation was one of the five points discussed by Travis in speaking on "Fundamental Business Management Is Sound Business Management."

In covering other points, he urged dealers to concentrate on a limited number of lines, "take a careful look before you decide personally to carry paper that has been rejected by your finance company," and keep operating expenses within 80% of expected sales volume.

Regarding replacement selling, he said:

### Refrigerators Represent 25% Of Dealer's Business

"Refrigerators represent approximately 25% of the average appliance dealer's total volume, and will continue to be the backbone of the overall operation."

"As a manufacturer, we have continuously made comprehensive studies of the replacement market as it affects the overall merchandising of the dealership. This subject has received top priority in importance as it relates to the future appliance business, and we have used some of the best personnel in our management group on this assignment."

"A dealer can, almost unknowingly, tie up his capital in used and trade-in refrigerators, as this type of business becomes an increasingly important factor in his total sales volume."

### Situation Compared to Used Car Problem

In 1932 the automobile business, after many profitable years, found that dealers had slowly accumulated a stock of used cars to the point where the working capital of these dealers was becoming seriously impaired.

"The competitive market on automobiles had forced dealers to grant trade-in prices that were too high. The customer was in the driver's seat in a strong buyers' market. As a result car distributors and manufacturers found it necessary to stop the shipment of new cars to dealers who had more than a 30-day supply of used cars on hand, in order to get the dealer's capital out of the used cars."

"Before World War II, refrigerator manufacturers were also concerned about trade-ins. At that time, an average of 20% of new refrigerator sales involved a trade-in, and in some cases dealers were making an unprofitable trade by offering too much for used refrigerators that could not be renovated for resale, and had to be scrapped."

"Back in 1939, there were a large number of dealers throughout the country who had all of their profit and a large portion of their capital tied up in used refrigerators in the back room. The inevitable shortage of all types of refrigerators that

came with the war, permitted these dealers to get out from under this serious situation, as a ready market was found for any units that would operate, regardless of age or condition."

### Upswing In Trade-Ins Likely

"Since the war, this picture has materially changed, with one out of every two refrigerators sold last year involving the trade-in of a used refrigerator. As we look forward into 1952, this trade-in percentage will probably increase to at least 60%."

"Obviously, it is essential, within the keeping of good business practices, that a control be placed on the quantity of used refrigerators a dealer should have in inventory, and a ceiling should be established for this purpose."

"You as a dealer have an investment in the used refrigerator, just the same as new merchandise. It partially comes from capital, and partially from profit, because you cannot realize the profit on your new refrigerator sale until the used refrigerator has been liquidated."

"Dealers who carefully watch the used refrigerator inventory in relation to new sales, and take in only such used equipment as can be resold at a profit, or scrap unsalable units immediately, can average their profits on the salable renovated units in such a way as to avoid serious loss, and continue to be sound operators."

"This trade-in situation can be handled on a sound, profitable basis if it is given the same attention that the merchandising of a new product receives, and if you as a dealer will continuously watch the turnover of all the products that you have to sell, including trade-ins, in which you have your working capital invested."

In addition to replacement selling, Travis covered these other points: over-all capital requirements, investment in inventory, conversion of inventory to receivables, and budget and forecasting.

### Over-All Capital Requirements

"Among over-all capital requirements," he stated, "there are certain fixed expenses that require an investment of capital, month in and month out."

"These funds are required for the daily operation of your business, to cover occupancy, light, heat, salaries, and all items of fixed overhead. These funds must be provided for, and are not available for the purchase of merchandise and general conduct of your business."

"The maintenance of your inventory should be on the basis that you will get a good number of inventory turns by types of products."

"Concentration on a limited number of lines will more than double the number of inventory turns that can be expected when multiple lines are stocked. Your store will produce almost twice as many gross profit dollars on the average inventory investment, as on the equivalent amount of money invested in several lines, with half the number of inventory turns annually."

"You can take advantage of the maximum available discount for quantity buying when your inventory is concentrated in one or two lines. This one item alone means about 3% in gross profit."

"There is one word of caution, however: when a dealer buys inventory on credit or floor plan, if quantity is in excess of normal requirements, then a larger discount must be realized to come out even. As an example, buying in carload lots usually gives approximately 4% more discount than LCL, and split-card approximately 2%. This more than absorbs interest costs."

"Usually, if inventory is carried more than four months, it will cost you more to move than if purchased at warehouse prices as required. Most dealers find it hard to make a profit on inventory carried longer than four to five months."

Now, when you add 2 or 3% to your gross as a result of quantity buying, when you reduce your floor space requirements for product display by 25 to 50%, and when you increase turnover by 50 to 100%, I think the advantages of concentra-

tion of inventory are apparent to everyone."

### Conversion of Inventory To Receivables

On conversion of inventory to receivables, Travis had this to say:

"Care should be exercised in the amount of paper that is carried on open account or 30-60-90 day basis. It is easy to get the bulk of your working capital tied up in this type of paper to the point that it becomes difficult to operate, in addition to the credit risk involved."

In handling your installment paper, the attitude of finance companies varies toward the approval of credit. Some finance companies feel that you, the dealer, should be the first credit screener; the customer is yours and should be in your control. Other finance companies, not so retail-minded, retain complete control over the extension of credit."

"But no matter which type of company you are working with, take a careful look before you decide personally to carry paper that has been rejected by your finance company. Remember that they have facilities for handling installment paper."

Travis then took up budget and forecasting.

"It is customary practice," he noted, "to forecast sales on a 30, 60,

and 90-day basis, with a 30-day forecast firm, 60 days semi-firm, and 90 days tentative. By forecasting in this manner, you arrive at the tentative sales volume that can be expected for the coming three-month period, and the amount of gross profit that this volume will produce."

"Then forecast your operating expenses for the same period to determine your anticipated profit picture. A good rule of thumb is always to keep operating expenses within 80% of expected sales volume to allow for any unanticipated drop in sales volume for reasons beyond your control."

### Don't Budget on Basis of 100% of Anticipated Volume

Travis remarked here that there is a tendency among dealers to budget on the basis of realizing 100% of anticipated volume. "If you have a down-draft of even 10% in sales you're in for trouble," he said.

"And here is one of the cardinal rules in forecasting—don't accept or prepare a forecast that shows a loss operation. It's hard enough to keep a profit structure in a competitive market without forecasting one to the contrary, and then hoping that things will go a little better. This is not the place for optimism."

Concluding, Travis told the dealers that "if you can keep your budget within the limits that your sales volume will permit, keep your inventory turning properly, and operation costs in line, then you can be assured of a satisfactory net profit and fair return on your investment, both in time and money. This is, in simple words, the only answer to a profitable dealership."

One dealer wanted to know what

percentage of traded-in refrigerators are resalable.

### Statistics on Condition Of Trade-Ins

Travis replied that studies made by Kelvinator showed that out of every six refrigerators traded in, two could be renovated and four would be "junkers." It was also found, he said, that the two resalable refrigerators can be handled on at least a break-even basis and in some cases profitably.

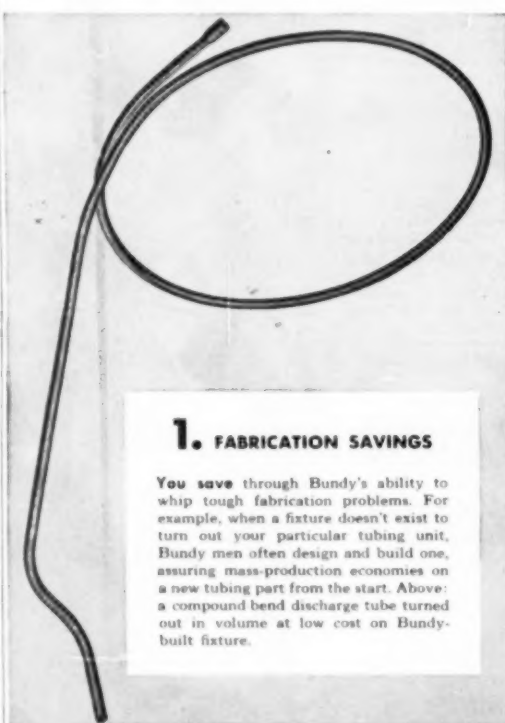
He noted that Kelvinator was showing at the mart two 1940 refrigerators side by side—one reconditioned and one not reconditioned. A sign stated that the un-reconditioned unit would sell for \$79.95, while the other—reconditioned at a cost of \$16.10—would sell for \$129.95.

Travis also said his company recommends that dealers accept in trade only refrigerators with sealed units. However, comments from the audience and a show of hands indicated that a large number of the dealers present were reconditioning refrigerators with open-type units and making a profit.

One dealer observed that he has been rebuilding sealed units himself for some time, charging \$45 and offering a one-year guarantee. He pointed out that, of course, it is necessary to have the proper equipment to do this work. Other retailers cited their use of the services of rebuilding firms or the factory.

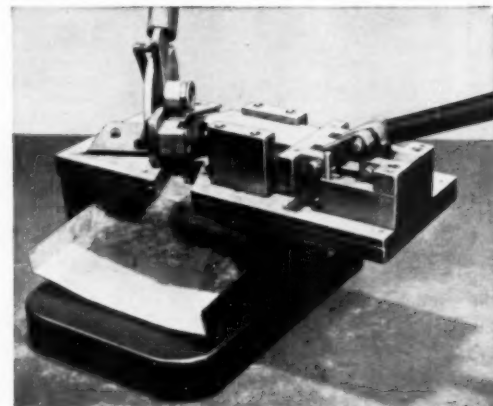
Another question raised from the floor was regarding shortening of lines. Arthur Brandt, St. Louis retailer, volunteered the opinion that the only justification for carrying a number of lines is when the dealer specializes in a particular appliance."

# Your finest



## 1. FABRICATION SAVINGS

You save through Bundy's ability to whip tough fabrication problems. For example, when a fixture doesn't exist to turn out your particular tubing unit, Bundy men often design and build one, assuring mass-production economies on a new tubing part from the start. Above: a compound bend discharge tube turned out in volume at low cost on Bundy-built fixture.



## 2. PRODUCTION SAVINGS

You save because Bundy men are always on the alert to trim production costs further within Bundy. Above: fixture built to bend tubing part for a leading manufacturer of refrigerator components. Fixture combines work of two previously required, saves tooling costs, handling time. Savings from production refinements such as these go right on to Bundy customers.



## 3. TIME SAVINGS

You save time because Bundy may have already worked on a problem like yours. New type of condenser, above, uses wire as secondary radiating surface. This was developed in close collaboration with Bundy engineers and uses serpentine coils mass-produced on Bundy patented multiple-benders. Its principle can be readily adapted to many other condensers.



## 4. PERFORMANCE SAVINGS

You save with leakproof, trouble-free Bundyweld performance in your finished refrigeration unit. For example, Bundyweld refrigerator coil (above) on cycling test gives no indication of leakage in presence of halogen leak detector, sensitive to leaks as small as 1/100th ounce a year!

Stores More in  
Less Space...  
Cools Faster!

**Speed-Freeze**

bottle beverage  
coolers

write

**IDEAL COOLER CORPORATION**  
2953 EASTON AVE., ST. LOUIS 8, MO.



## Hotpoint Franchise Program Will Refine Dealer Structure and Upgrade Selling Performance

CHICAGO—With the aim of revitalizing its selling organization in preparation for an era of hard selling ahead, Hotpoint Inc. has started a four-point franchising program that includes an across the board upgrading of dealer performance; replacing weak outlets; adding selected specialty dealers, and completing and developing a department store merchandising activity started in 1949.

The 1952 activity will be given top priority and is being implemented through district managers and distributors. In announcing the program, Edward R. Taylor, vice president, said that as part of a five-year growth plan, the company intends to make appreciable gains in its per cent of industry sales on all major appliances.

Taylor said that although spot shortages of some appliances may develop in 1952, Hotpoint will put heavy emphasis on the need for selling rather than on these shortages. Expanding markets in the nation's growing economy, and enlarged production facilities continually coming into operation point up the increasing need for sound and aggressive selling programs, he said.

The industry has experienced a tremendous expansion since 1946 and should take another sharp upturn when the nation's dual economy has satisfied defense needs, Taylor said.

By refining the dealer structure and upgrading selling performance

now, Hotpoint will be prepared for the hard selling job that is ahead, he said.

The first phase of the new franchising program stresses the need for closer cooperation between distributor and dealer. To develop the hard core of full-line dealers that will be needed in coming years, distributor salesmen are being urged to work with each dealer to improve local selling efforts.

Many dealers do not carry a full-line because they don't appreciate the profit opportunities possible, he said. If distributor salesmen will help dealers improve business management, hire and train salesmen, use advertising and new merchandising aids, and improve service, many small dealers can be developed into hard-hitting, progressive merchants, Taylor declared.

This dealer-development technique was largely responsible for the rapid growth of the industry in the twenties and thirties and should be revived now, he said.

The nature of water-bearing appliances and their installation characteristics make the addition of progressive plumber-dealers desirable. They have the facilities and experience to do a good job on dishwashers, disposals, water heaters, washing machines, and clothes driers, and give the customer excellent service after purchase, Taylor said.

In addition to plumbing contractors and home equipment merchants, builders will receive special attention so that this important area of the business can be further developed, he said.

Distributors will be asked to build even closer relationships with utility personnel in their territories, Taylor said.

In the area of key accounts, Taylor said that a separate program was being developed especially for this activity. Department stores and other large retail outlets will be given individual attention to increase the effectiveness of kitchen planning activities.

Since 1945, when virtually no department stores carried Hotpoint, the number now endorsing the name has grown to more than 200. All of these stores have installed operating kitchen displays.

In analyzing the present and building for the future, Taylor said the requisites of a successful dealer should be emphasized. A good reputation is the foundation upon which good customer relations are built.

Consumer's attitude toward a manufacturer depends on the dealer's treatment of them from the time they first visit the store to look at appliances, to the service that follows after the sale.

The majority of dealers now do a good job on refrigerators. With closer supervision and assistance of-

fered by distributors, many of these dealers can expand into the profitable full-line merchandising operation represented in kitchens and home laundries.

Taylor asserted that appliance retailing has not progressed since 1941 in keeping with the industry's physical growth. There are few highly-trained salesmen because merchandise has been in short supply.

He said that appliance retailing practices must be upgraded to match the progress made in other fields of selling. Automobiles, once sold in back-alley blacksmith shops, now are displayed in modern showrooms in every city. Good service is an essential part of the dealer's operation. Similar progress has been made in the food business, a transition from the cracker barrel operation to the supermarkets of today.

The appliance industry must take positive action now to upgrade selling practices, Taylor said. This is necessary so that when merchandise is in free supply, the appliance retailer will be assured of getting his share of the consumer's dollar.

### CPR 30 Mfrs. Must Price Installation Under CPR 93

WASHINGTON, D. C.—The Office of Price Stabilization has recently amended Ceiling Price Regulation 30 to require machinery manufacturers, including those making refrigeration and air conditioning equipment of 25 tons capacity and larger, to price any installation and erection services done in connection with the sale of their equipment under CPR 93. CPR 93 covers contract construction and related services.

This action is covered in Amendment 30 to CPR 30, which became effective on Jan. 28.

Where the engineering and supervisory services furnished by the manufacturer in installing a commodity are part of the contract for installation or erection, the installation contract will be priced under CPR 93, the agency said.

However, engineering and supervisory services furnished by the manufacturer and services included in the base period price in connection with the sale of a commodity on an installed basis, will continue to be covered by CPR 30.

### Carol Jones To Head 2 Sears Buying Depts.

CHICAGO—Sears, Roebuck & Co. has announced the appointment of Carol W. Jones as head of its freezers and household refrigerators buying departments in the national buying offices here effective Feb. 1.

Jones, at present, is head of the farm equipment, freezers, and nursery goods buying departments.

John A. Hurley, who has been head of the refrigerators and washers-driers departments, will continue as head of the latter.

### Refrigeration Equipment Saves \$200 Weekly

WACO, Texas—Installing reach-in refrigerators at soda fountains of the six Pipkin drugstores here and stocking the boxes from a central walk-in refrigerator at a downtown store is helping the Texas chain to effect a \$200-a-week saving in food service costs.

The Pipkin stores formerly provided hot food service in each unit from the fountain and a completely-equipped kitchen. Because of high operating costs, however, it became necessary to cut expenses to the bone, according to Thurman Frazier, head of fountain service operations.

For that reason, all foods are now prepared at the Third and Austin St. store in downtown Waco. It is then shipped by panel truck in "Thermocan" hot food units to every fountain.

For maintaining the stocks of foods bought in large quantities at attractive prices, Frazier installed a custom-built, 10 ft. by 8 ft. walk-in refrigerator in the basement kitchen.

Refrigerated food items move from this central walk-in box via the same insulated cans to 4-door, 16-cu. ft. reach-in boxes located at the rear of each fountain.

By switching over to this central kitchen system, it is believed that the food service operation can get along with at least four less employees and possibly more, with a saving of between \$200 and \$300 a week, Frazier said.

### G-E 'Emergency Tag' Plan Will Tie-In with Civil Defense Efforts

BLOOMFIELD, N. J.—An emergency control identification program for householders has been launched by the air conditioning division of the General Electric Co. to operate through its heating equipment dealers.

The program is intended to tie in with local civil defense efforts and minimize the danger of explosion and fire in homes during war emergencies.

Cooperating G-E heating equipment dealers are going into homes and placing different colored tags on the four main shutoff controls found in most homes. There is a red tag for the gas control, a white one for oil, blue for water, and yellow for electricity.

A color code chart bearing the dealer's name and services he offers is also placed in a handy, conspicuous place for ready reference. While affixing the tags, the dealer gets an opportunity to survey the age and type of heating equipment used in the home. This can be followed up later by a sales pitch for modernization with G-E equipment, the company suggests.

The company says that G-E distributors Koenig & Goller in Staten Island, N. Y. and Farrell Sales & Service of Upper Darby, Pa. have tested the emergency control identification plan in their areas and have reported that they are getting an excellent response.

### Norge Distributors Now Showing 1952 Models

CHICAGO—Norge's 68 independent distributors are currently holding open houses and meetings at which dealers are given the opportunity to inspect the more than 50 models that constitute the complete Norge line for 1952. H. L. Clary, vice president in charge of sales for Norge Div., Borg-Warner Corp., announced here recently.

One or more factory representatives is attending each of these meetings, he said.

### JUST ASK US!

Turn to "What's New" Page for useful information on new products.

## refrigeration tubing buy on every count



Specify Bundyweld Tubing and you get the tubing features, the dependable performance, the fabrication skills and services that effect the true economies in your refrigeration tubing unit in the long run.

Measure all that you buy in Bundyweld Tubing against your performance and cost requirements for evaporators, condensers and vital refrigerant lines.

Features: You buy tubing with unmatched features. Bundyweld is the only tubing double-walled from a single strip, copper-brazed through 360° of wall contact. Bundyweld's double wall is stronger, yet thinner; has high bursting strength, high thermal conductivity. Bundyweld is leakproof.

Performance: You buy dependable performance, proved in the hundreds of thousands of refrigeration units made during the last 20 years with tubing parts of Bundyweld. Proved, too, by the manufacturers'

continuing use of Bundyweld.

Savings: You buy the industry's finest cost-cutting skills and services. Bundy men called in during critical design and planning phase are often able to bring about major savings in materials, tooling costs, or production time at that point.

Then, promptly, and as specified, Bundyweld comes to your production lines—either fabricated by Bundy or in lightweight coils and lengths for easy, economical fabrication by your men.

Price-minded, performance-minded refrigeration engineers know there is no adequate substitute for Bundyweld Tubing. Or for Bundy skills.

Get in touch with a Bundyweld Distributor listed below, or write Bundy Tubing Company, Detroit 14, Michigan

## Bundyweld Tubing

DOUBLE-WALLED FROM A SINGLE STRIP

### WHY BUNDYWELD IS BETTER TUBING



NOTE the exclusive patented Bundyweld beveled edges, which afford a smoother joint, absence of bead and less chance for any leakage.

Bundy Tubing Distributors and Representatives: Cambridge 42, Mass.: Austin-Hartings Co., Inc., 226 Binney St. • Chattanooga 2, Tenn.: Poirson-Deakin Co., 823-824 Chattanooga Bank Bldg. • Chicago 32, Ill.: Latham-Hickey Co., 2333 W. 47th Place • Elizabeth, New Jersey: A. B. Hurley Co., Inc., Post Office Box 476 • Philadelphia 2, Penn.: Ruten & Co., 1717 Sanson St. • San Francisco 10, Calif.: Pacific Metals Co., Ltd., 3100 19th St. • Seattle 4, Wash.: Eagle Metals Co., 4755 First Ave. South Toronto 5, Ontario, Canada: Alloy Metal Sales, Ltd., 881 Bay St. • Bundyweld nickel and Monel tubing is sold by distributors of nickel and nickel alloys in principal cities.

**CHILL CHEST**

The Greatest VALUE in FOOD FREEZERS

THE FAMILY'S PREFERENCE EVERYWHERE

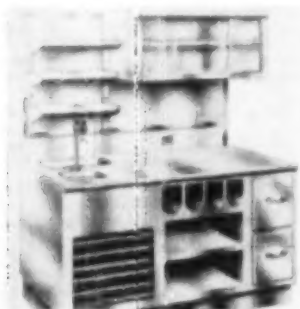
8 CU. FT. 15 CU. FT. 23 CU. FT.

Revco, INC. • DEERFIELD, MICH.

## What's New

When requesting further information on new products, please use "Information Center" form.

### 2 New Waitress Stations Are Mechanically, Ice-Cooled



KEY NO. B-210

NEWARK, N. J. A new waitress station with refrigerated water cooler is now being produced by the Stainless Food Equipment Co. here under the trade name "Beverly." The company is also producing the same unit with ice-cooled water station and ice bin under the name "Coronado."

The Beverly waitress station consists of the water station, a utility section with four pitched silver bins, a bread compartment, a 70-in. high stainless steel back panel with three tumbler shelves, and a pastry display

case built into the superstructure section.

The water station is 21 in. long and features an instantaneous cooler of 20 g.p.h. capacity hooked up to a 1/2-hp. self-contained compressor. It is also equipped with a butter and ice pan with center dividing partition.

This is located behind the push-back faucet.

The compressor is located in a fiber glass insulated section containing the water chiller and rests on slide-out tracks for cleaning and servicing.

The Beverly, called the 8W-1256-B, measures 56 in. long and 24 in. deep. The three tumbler shelves are each 20-in. long and 9 1/2 in. wide. The pastry display case is 36 in. long, 14 in. deep, and 17 in. high and is faced with sliding glass doors.

List price of the unit is listed at \$1,390.

Instead of the instantaneous water chiller, the Coronado uses twin cylinder cooling which is claimed to have much larger capacity than 56 ft. of coil. The twin cylinder is located beneath a removable, stainless steel false bottom in the ice bin.

The Coronado is labeled IW-1256-B and is priced at \$1,090 list.



### Small Meter Measures Noise from Equipment

KEY NO. B-211

CAMBRIDGE, Mass. An improved new Type 410-B sound level meter used for accurately measuring noise, sound, and vibration from equipment such as blowers and ventilating fans, has been introduced by Herman Horner Scott, Inc. here.

A rugged, compact, and accurate instrument is made possible by use of subminiature tubes and components, together with miniaturization techniques which are being patented.

This new model features greater low-frequency range, electrical circuit improvements, and mechanical design refinements.

The sound-level range is from 34 to 140 db above the ASA reference level of 0.0002 dynes per sq. cm.

### AP10 Service, Repair Tag Has Large Red Numbers

KEY NO. B-212

NEW YORK CITY—A new form AP10 service and repair tag featuring large 3/4-in. numbers at the top is being offered by Automotive Systems, printer of business forms here.

The patch eyeletted tags are printed on extra quality manila tag stock and are designed to record every detail of the service transaction and to provide a permanent record of parts furnished and work done.

The tag is divided into three sections. The top, eyeletted section is to be wired to the article to be repaired. This section may remain on the article when it is completed and returned to the customer. An imprint of the company name, address, and telephone number can be placed on this portion of the tag.

The center section is the "office record" section. It is made for filing in a 3 by 5-in. card file. It lists full details regarding the whole job and has space for a complete list of parts printed on the reverse side. The office record should be filed numerically until the work is completed and then filed alphabetically for future reference and follow-up.

The third section is the claim check for the customer to be presented when work is delivered.

### Sealed Unit Parts Develops Check-Valve for Coldspot

KEY NO. B-213

NEW YORK CITY—A non-corrosive check valve for Coldspot refrigerator units, both sealed and semi-sealed, has been announced by Sealed Unit Parts Co., Inc. here.

All brass shell, nylon seat, and stainless steel ball are the three main features of the unit, according to Sidney Weiner, secretary of the firm.



### Flexible Plastic Tubing Suitable for Beer Line

KEY NO. B-214

DETROIT—A new, specially compounded plastic tubing is being marketed by Hudson Industries, Inc. here, which the manufacturer claims is tasteless, non-toxic, and odorless.

Its use to date has largely been in connection with soft drinks and beer dispensing systems, but its properties are such that it offers many possible uses in fluid, gas, or low vacuum pressure systems.

This tubing has proved satisfactory for conveying CO<sub>2</sub> gas and water to the carbonator and carbonated water to the dispenser. It also handles air from compressor to syrup tanks and syrup to dispenser.

The manufacturer points out that the dense, smooth inside surface makes it ideal for beer line use since there is no metallic oxidation to set up a chemical reaction as beer flows through the tube.

According to the manufacturer, Flexlite tubing will remain flexible, will not harden with age, nor dry out, become brittle, or crack. It has no moisture absorption. It has a tensile strength of 600 p.s.i. at room temperature of 70° R. As the temperature increases, the tensile strength increases. Melting point is 250° F.

To simplify the use and make for easy installation, Hudson Industries engineers have designed a series of fittings. The tube insert has a fluted shank which is almost impossible to remove after it has been installed. A special stainless steel spring clamp is enshathed over connections.

Standard beer, carbonator, soda fountain, and mixing faucet nuts with suitable washers are also available in brass and stainless steel.

Flexlite tubing is now being made in 1/4-in. i.d. and 3/8-in. i.d. Larger sizes will be available soon.





# Solenoid Valves

A Series of  
Dependability Features  
Number Five

## Opening Pressure Differential

Made Better to  
Serve Better

JE Solenoid Valves have a high opening pressure differential rating—higher than most other Solenoid Valves on the market. They meet the catalog rating of 250 PSI differential with less than 85% of rated voltage applied to the coil. This is made possible by the use of a direct-acting plunger—there is no temperamental "impact" action to cause difficulty—no sliding pistons to jam.







## SOLENOID VALVES

### Have 5 Major Features of Dependability


- ① Tight Sealing — No leaking
- ② Simplicity — Only two moving parts
- ③ Long Life — Cool Coils
- ④ Durability — All corrosion-resistant materials
- ⑤ Opening Pressure Differential — Higher than most others on the market

may we submit samples for your use and approval?

Jackes-Evans Manufacturing Company

## BETZ PANEL UNITS

FOR MOUNTING  
ON BACK WALL  
OR MULLION  
*for*  
REACH-INS  
DOUGH RETARDERS  
OR PASS THRU'S



Vertical discharge drip pan — oilless motor — baked enamel finish — and other outstanding features.

MODEL NO.	BTU AT 1" TD	CFM	SURFACE SQ. FT.	DIMENSIONS		
				H	W	D
130-R	130	204	48.64	34 1/4"	17 1/4"	9 1/8"
190-R	190	285	68.56	34 1/4"	22 3/4"	9 1/8"
260-R	260	385	85.50	34 1/4"	22 3/4"	10 3/8"

See Them at Your Wholesalers

## BETZ CORPORATION

HAMMOND • INDIANA



## What's New (Cont.)

### Combination Fan-Heater Circulator Has 8-In. Fan



KEY NO. B-215

CHICAGO—A combination fan-heater circulator that has an 8-in. fan to force air heated by the twin elements into the room has been introduced by the Chicago Electric Mfg. Co. here.

Marketed under the "Honeywell" label, the circulator is lightweight, compact, and equipped with a handle for carrying purposes. It is housed in a grey, radio-type cabinet. Non-mar rubber feet protect furniture when the circulator is used as a table-top heater.

The snap switch at the top has three positions: off, fan, and heat. Operating on 115-volt, 60-cycle a.c. the circulator pulls 1,320 watts for heat and 30 watts for fan only.

The fan only can be used in summer to distribute cool air.

Double protection is provided first in the individually wire enclosed heat elements and secondly in the convex front guard of polished grillwork.

Known as the model 1207, the circulator is priced at \$21.95. It is approved by Underwriters' Laboratories.

### Monitor Designs Small Wringer-Type Washer

KEY NO. B-216

NEW YORK CITY—Retailing for \$49.95, a new wringer washer designed for the small family with limited living space has been introduced by Monitor Equipment Corp.

Designated model 4, the unit has a capacity of 4 lbs. of dry clothes. Its high operating speed will enable the washer to do 10 lbs. in 10 minutes.

Construction is of stainless steel, government approved, instead of nickel and chrome. The washer comes with a standard-type wringer.

Model 4 is the lowest priced in the firm's line which now includes five models. Other models and retail prices are: Model 5—\$59.95; model 5-A—\$64.95; model 6-PL—\$79.95; and model PM—\$199.95.

Model 5 has a different type motor, wringer, and base construction which includes wheels. In addition to the above, model 5-A adds a water pump, while model 6-PL adds further a separate motor and new, enameled work space top.

Model PM can be had with a Formica table-top surface.

### Styrene Bowl Added To Sweden Speed Juicer

KEY NO. B-217

SEATTLE—A new styrene juice bowl and a new "lift-off" basket are features of the 1952 model 3-1 Sweden "Speed Juicer" now in production at the Seattle plant of the Sweden Freezer Mfg. Co.

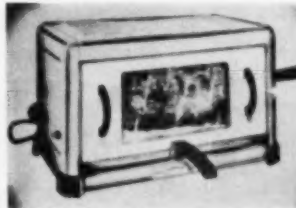
Replacing the enamel juice bowl, the new styrene bowl, in hospital white, is much stronger and will not chip. It is completely impervious to fruit and vegetable acids.

The spout of the bowl has also been redesigned to make cleaning easier. The new combination of locknut, basket, and stainless steel cutting disc into one integral unit makes disassembly, cleaning, and reassembly much easier and quicker.

Features of the new juicer which have been retained from last year's model include the ebony black base, circled by a chrome band, for an attractive color contrast to the white upper food zone parts, a heavy-duty 1/4-hp. General Electric motor, quiet and vibration-free operation; grease-packed, lifetime bearings; a micro-switch, operating in conjunction with the redesigned, chrome handle to prevent motor starting until handle is securely seated; and the patented, automatic feed with the exclusive non-bruising juice extraction process.

Included with each Sweden Speed Juicer leaving the factory is a copy of the "Abundant Health Plan," a booklet giving the new juicer owner a better understanding of the uses of the various fruit and vegetable juices for optimum health. This booklet is also available separately.

### Rotisserie-Broiler Has Slot for Spit Handle



KEY NO. B-218

LONG ISLAND CITY, N. Y.—A portable rotisserie and broiler combination that is claimed to roast or broil meat for an entire family at one time was introduced at the National Housewares Show in Chicago recently.

Called the Superstar rotisserie and broiler, the unit is made by Stern-Brown here. It is priced at \$59.95 east of Denver and \$62.50 west of Denver.

One of the unusual features of the Superstar unit is a hinged "spit" door on one side. The door is closed during broiling and opened during roasting, providing a horizontal slot along which the spit handle can slide.

The broiler is constructed of triple plated copper, nickel, and chrome with double walls to retain heat. It measures 18 1/4 by 10 1/2 by 11 in. high on the outside and 14 1/2 by 10 by 7 1/4 in. high on the inside.

A three-heat switch mounted on one side of the broiler provides alternating current at 1,400, 700, and 350 watts. A separate motor switch is used for barbecuing or roasting only.

An aluminum drip tray with folding plastic handle and wire grid is provided. It slides into three different positions on a removable broiler tray rack. A spatter shield with oven glass window prevents grease spattering when the unit is used for roasting. Four Bakelite insulated corners prevent marring of the table.

### M-H Develops Low-Cost Humidity Controller

KEY NO. B-219

MINNEAPOLIS—A sensitive, low-cost humidity control has been developed by the Minneapolis-Honeywell Regulator Co. and is now in volume production.

Considerably less expensive than the company's electronic model, the new humidity control was designed primarily for manufacturers of portable and package humidifying and dehumidifying systems and for other applications which require a low-cost humidity controlling device.

The new control (H 64A), when tested in a special chamber, proved to have an operating differential of less than 5%. During the test, air was moving through the chamber at 1,200 f.p.m., the approximate air movement when the controller is mounted in a duct, and the rate of humidity change was 1% per minute.

**for more**  
**Ice Maker**  
**SALES**

**FILTRINE**  
**"Taste-Master"**  
**Deminerizer**  
**in the water line**

Cuts Service  
No Tastes  
Clear Ice  
Fits All Makes  
Small Cost

Crystal ice... without sludge-forming rust, sediment, mineral residue... chlorine taste... "milkiness." Ends major source of service calls. Write for new literature.

**Filtrine**  
Water Filters and Filters for 40 Years

**FILTRINE MANUFACTURING CO.**  
BROOKLYN 5, N. Y.

## Information Center

For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

### What's New or Current Literature Available

Key No. ....	Key No. ....
Key No. ....	Key No. ....
Key No. ....	Key No. ....
Key No. ....	Key No. ....

**Products Advertised**  
(list name, page, and issue date)

(PLEASE PRINT PLAINLY)

Name ..... Title .....

Company .....

Street .....

City ..... Zone ... State .....

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MAIL THIS FORM TO

AIR CONDITIONING & REFRIGERATION NEWS  
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write for the  
completely new  
**KOLD-HOLD**  
catalog—today

Here is a refrigeration reference book that is full of ideas for improving the efficiency and convenience of refrigerated rooms, cabinets and trucks... at a real savings in cost. You should see the suggestions it has for making your present processing, storage and cooler rooms more useful and effective.

Valuable every-day refrigeration information is included that simplifies the job of determining your refrigeration needs. You will find charts for computing plate requirements; tables of air infiltration loads; a list of the specific and latent heats for many perishable foods; and the heat leakage factors of common types of insulation.

This new catalog is yours absolutely free. Just fill in the coupon above and mail it to the Kold-Hold Manufacturing Company, Lansing 4, Michigan.

**KOLD-HOLD**

protects every step of the way



## Fan Belt Mfr. Controls Humidity To Control Product

*Eliminates Unequal Stretch,  
Shrink Problems Caused by  
Varied Moisture In Fibers*

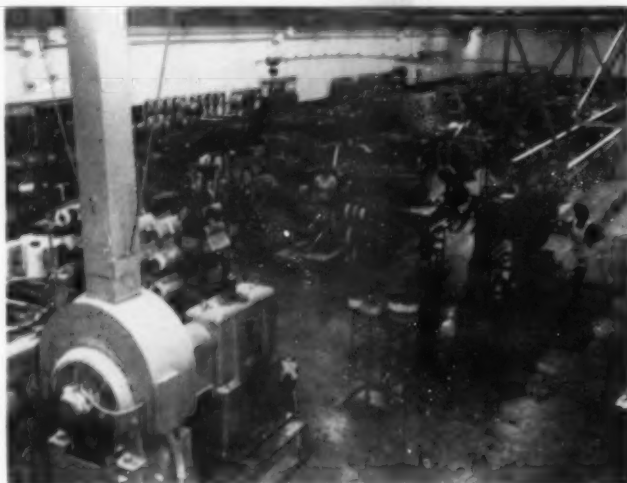
AKRON, Ohio—American industry has come up with an "incubator" treatment for manufacturing fan belts and their big brothers, industrial V belts for power transmission.

Said to be the only operation of its kind in the rubber industry, an entire factory devoted to rubber V belt manufacture at The B. F. Goodrich Co., Akron, is humidity-controlled. A newly built plant, in effect, transforms the factory into a giant laboratory. The area is sealed from all other operations to maintain a constant amount of moisture in the air.

B. F. Goodrich engineers say the reason for the unique plant layout is the tendency of rayon and other fibers and fabrics to absorb moisture. These fibers form the internal muscles of rubber V belts.

Where moisture content of the air varies from day to day, belt fibers absorb different amounts of moisture during manufacture. Such belts shrink or stretch unequally when in storage or in use, do not match each other in length when used in sets. Control of humidity at the factory eliminates this problem.

The humidity control system consists of capillary air washer which uses water at a controlled temperature to maintain necessary apparatus dewpoint. Washer also has re-heat coils to maintain necessary dry-bulb temperatures.



HUMIDITY CONTROLLED factory at Akron, Ohio, where B. F. Goodrich V-belts get "incubator" treatment during manufacture. Fibers and fabrics used in belt construction absorb equal amounts of moisture under controlled conditions, therefore do not stretch or shrink unequally in storage or in use.

The system handles about 44,000 c.f.m. of air. The fan is equipped with an inlet volume damper for control of the air quantity. Chilling of the water, when required, is accomplished by a heat exchanger and two 75-ton reciprocal compressors using "Freon-12".

The entire system is controlled by a dewpoint stat in the air leaving the washer and a thermostat in the conditioned space.

On the air inlet to the apparatus, an economizer system is used to take advantage of the cooling value of outside air when the temperature is below 50° F., thus saving on the use of mechanical refrigeration.

The master control is a dewpoint stat in the air leaving the washer. This controls the mixing dampers through an economizer stat and also controls two compressors when outside air is above 50° F. Each com-

pressor is equipped with 50% capacity reduction. A chilled water stat maintains water in the heat exchangers at a temperature suitable for use.

The dewpoint stat is reset over its range by a room humidistat and the re-heat coils are operated by a room thermostat which functions through a low limit stat.

The system is equipped with complete safety controls. The controls are pneumatic and all interlock to shut down the system if for any reason the fan should stop. The compressor control is interlocked with the circulating pump so that the compressors cannot run if the pump is off.

The room temperature is maintained at 76° F. at all times that outside air is below 76° F. When outside air is above 76°, the room temperature rises on a sliding scale to a top temperature of 90° inside when the outside air is 95° F.

The system was specified by B. F. Goodrich, designed by the Austin Co. The heating and ventilating contractor was Smith & Oby, Cleveland, and the chilled water cycle was by York Corp.

The washer principle was used because air carries large concentration of carbon black released from nearby Banbury operation. Exhaust ventilation is applied to large mill and tuber motors within the air conditioned area to take off excess heat generated.

An oven used to dry impregnated rayon cord is heavily insulated and exhaust is removed through insulated ducts.

Even distribution of air throughout the manufacturing area is accomplished by sizing of ducts and dampers at each outlet.

## Drugstore's All-Electric Food Preparation Unit Boosts Fountain Traffic

OMAHA, Neb.—The addition of an all-electric food preparation unit including refrigerator and top-of-the-counter refrigerated dispensing unit for milk, has boosted fountain traffic by approximately 50% and fountain dollar volume by over 60% at the Paxton hotel drugstore, 1401 Farnam St., it was reported by Manager K. L. Miller.

He explained that the fountain previously handled no hot sandwiches or meals, but since the installation of the food preparation unit, has had to rearrange the store to provide more booth space to accommodate the large luncheon and breakfast crowds.

The eight-stool fountain formerly took care of the fountain trade, according to the drugstore manager, whereas now there are frequently waiting lines although fountain capacity has been augmented by six tables seating four customers each.

A ventilator shield over the grill and an electric exhaust fan keep the drugstore free from cooking odors. The store also has air conditioning.

Manager Miller pointed out that the new grill equipment of stainless steel not only makes for good fountain sanitation and convenient food preparation but is an attractive addition to the backbar as well.

The mechanically-refrigerated dispenser for milk is a big time-saver, he declared, since all the waitress has to do is push the glass with one hand against a projection on the shut-off valve in the same manner that ice water is served in cafeterias.

## Wichita Engineer Wins Viking Name Contest

CLEVELAND—Winner of the Viking Air Conditioning Corp. contest to name its new 7-in. blower package was Robert G. Brunton, design and testing engineer for the Advance Furnace Co. of Wichita, Kans., the company announced recently.

As a prize, Brunton was awarded a Polaroid-Land camera. It was presented to him by Roger Laubach, Viking representative.

The "777" package is Viking's new blower model for small homes. It has direct drive and offers a selection of seven speeds.

## Chase Adopts New Carton For Copper Water Tube

WATERBURY, Conn.—Chase Brass & Copper Co. has adopted a new carton for its copper water tube making shipping, storage, and identification more convenient for users, the manufacturer has recently announced.

Depending upon the size of the tube, the new carton holds from two to five 60-ft. lengths of soft temper copper water tube, thus reducing carton disposal problems. A full carton is easily carried by only one man.

Designed by the Chase advertising department, the new carton incorporates advantages of efficiency-engineered packaging and replaces the practice of crating coils of tube in bulk or wooden cases.

## Glass-To-Metal Terminal Firm Builds New Factory

CINCINNATI—The Fusite Corp., manufacturer of glass-to-steel hermetic terminals, has just occupied a new factory more than doubling the space in its old facilities, according to S. G. Lang, secretary-treasurer.

Believed to be the first structure specifically designed for this type of manufacturing, the new plant is located on a four-acre site at 6028 Fernview Ave. It provides 16,000 sq. ft. of floor space as compared with 7,000 in the old Carthage Ave. plant and will permit tripling production, Lang said.

Fusite hermetic terminals have found a wide market among electrical refrigeration manufacturers and other makers of electrical and electronics equipment.

Officers, in addition to Lang, are W. A. Barrows, president, and Russell Stowe, vice president, according to the announcement.

## Melvin Heads Refrigeration Dept. for N. O. Nelson Branch

MARION, Ill.—A refrigeration department, under the direction of Bill Melvin, has been opened at the N. O. Nelson Co. store in Marion, Ill., a branch of the St. Louis wholesaling firm.

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## Is Specialty Selling a Lost Art?

**Indifference to Merchandising Methods Is Costing Thousands of Dollars; Hinchliff Says Home Freezers Are In 'Golden Age' of Marketing**

By John O. Sweet

CHICAGO—E. L. Hinchliff, sales manager of Amana Refrigeration, Inc., charged that many manufacturers, distributors, and retailers of food freezers have "become indifferent in their merchandising methods" in the past few years.

Addressing the recent annual convention of the National Appliance & Radio Dealers Association, Hinchliff declared:

"The food freezer represents the greatest profit opportunity—the broadest market—that the major appliance business has yet seen.

"But the freezer market is still a 'specialty market' and the greatest rewards will go to those freezer dealers and salesmen who thoroughly inform themselves as to the freezer utilization story and the features of the product they are promoting, and then go out and sell that product by straightforward specialty methods."

### 6 Years of Sellers' Market

During the past six years, Hinchliff said, "this industry has floated along on a practically continuous seller's market. As a result, manufacturers, distributors, and dealers alike have, in a great many instances, become indifferent in their merchandising methods.

"Manufacturers have been indiscriminate in their choice of distributors, in many instances, and have been neglectful of the very necessary part they should play in dealer training.

"Distributors have, in too many cases, taken the shortest and easiest path to maximum volume at minimum expense. Merchandise has, in effect, been sold to 'all comers' and little effort made to build sound, capable dealer organizations, upon which any hope for the future economic and ethical stability of this industry must be based.

"Many of the present generation of appliance dealers have never learned how to do an intelligent specialty selling job in a buyer's market. Those who were in business prior to World War II have too frequently forgotten most of what they knew about specialty selling."

Hinchliff said his company made

analyses of some of its "more or less doubtful" distributors when it became concerned over this situation. The results, he observed, "amazed us."

A check of one distributor's invoices on Amana products showed, Hinchliff stated, that more than 37% of the manufacturer's units sold by the distributor had gone to "one-shot" dealers. Only a handful of dealers were actually franchised and only a small number could be called dealers in the sense of keeping a representative line in stock and merchandising actively, he told the convention.

### Back-Door Selling Ruinous

Hinchliff said it was also discovered that many units were sold to employees of industrial accounts. Other examples of back-door selling were uncovered, he added.

"This is a distressing situation," the Amana executive remarked. "Whose fault it is I don't know. It reflects a condition that seems to exist in all levels of the industry.

"We must work to correct this condition. My company is now conducting analyses of all our distributors to see who's who in our distributing family. We're going to clean up as much as possible in our own company."

These remarks were heartily applauded.

Stating that a refresher course in old-time specialty selling is needed at the dealer level, Hinchliff said he believes the average appliance dealer and salesman can learn the product and then tell a good product story.

Studies made some time ago by Amana, he continued, showed that 75% of appliances purchased at retail were sold by salesmen who did a "20% or less job" of telling the product story.

### 'Twilight Zone' the Real Market

This means that most of these customers were pre-sold either through neighbors or reading, he pointed out; they moved into the dealer's store under their own power. Advertising may have helped a little in establishing the dealer's name, but the

customer was at least partially pre-sold, he said.

"The 'twilight' zone or market constitutes our real market," Hinchliff stressed. "This market is made up of people who are only partially sold—if at all—on our products and what these products can do for them. These are the prospects to whom we must tell a sound, carefully worked out story on the merits of our products.

"The company with which I am associated has already inaugurated a comprehensive dealer sales training program. Additional personnel have been engaged to do this training work in the field. New equipment, such as slide films, sales training booklets, and other material has been provided.

"It is our intention to continue this work aggressively until further notice and thus do everything within our power to assist our dealers toward the attainment of the greatest possible share of the tremendous food freezer market."

### Early Pioneering Stage of

#### Any Appliance Is Profitable

Earlier in his talk, Hinchliff said it is considered "that the most profitable period for the dealer, in the marketing of any specialty appliance, is that which immediately follows

the early pioneering stage and continues until about 40% saturation has been accomplished.

"It is during this period that profit margins are not only most substantial but are more secure, less subject to dissipation by trade-ins, unethical merchandising practices, price cutting, and other factors. This might well be called the 'Golden Age' in the marketing of any electrical appliance.

"The food freezer is in the very fortunate position of just entering this Golden Age. It is unquestionably today's biggest profit opportunity in the great specialty appliance industry.

### Freezer Is 'Ready' To Be Sold

"The food freezer has met with a more warmhearted response from the American housewife and her family than any other utilitarian appliance yet produced. There are sound reasons for this high appreciation of the virtues of the food freezer and they center mainly around the fact that this appliance actually does more for the user than any other as yet on the market.

"If anyone questions the truth of this statement, he has only to call on any given number of food freezer users. I will guarantee that he will be met by such a barrage of enthusiastic acclaim as to remove every vestige of doubt from his mind.

"There is no question whatsoever as to the readiness of the food freezer market. In fact, it is well known to most freezer manufacturers that the average housewife is years ahead of the average appliance dealer in her knowledge of frozen foods and food freezers and in her appreciation

of their utilitarian advantages.

"One important reason for this is the vast amount of favorable publicity given these subjects by newspapers and magazines across the country. During the past six years, the food freezer has doubtless been favored with more gratuitous publicity than any other appliance within a comparable period of time."

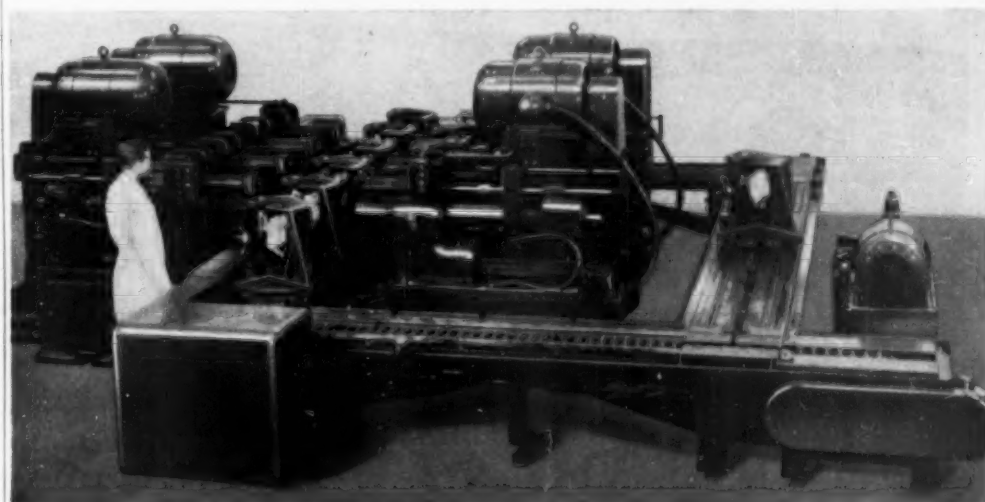
## Stainless Steel Reach-In Spurs Sales of Biologicals

DALLAS—A feature of the prescription department at the huge new Skillern drugstore in the Wynnewood Shopping Center here, is a two-door stainless steel, custom-built refrigerator.

Designed to suggest the care with which the drugstore stores and handles its biological drugs, the big refrigerator was planned as part of the Texas chain's biggest store. It is part of the recently completed multi-million-dollar shopping district which contains 150 other stores, compactly grouped in four blocks.

The prescription department which occupies a 50-ft. space across the rear of the store, is one of the largest in the state. A window gives a clear view from the floor of six right-angle bays of shelving in which drug ingredients are stored.

In the center, a 6-ft. space has been left clear for the two-door stainless steel refrigerator, built by American Refrigeration Co. This gives a clear view of such products as insulin, vaccines, sera, under fluorescent light. The big refrigerator has substantially stipulated sales.



Cross Transfer-matic, with 10 Howell motors, helps speed aircraft production.

## Drills, bores 80 cylinder heads per hour!

This Cross Transfer-matic drills and bores 80 aircraft engine cylinder heads per hour! That means a lot of engines for military or civilian planes.

Built for one of the industry's leading manufacturers, this machine automatically rough drills and forms valve pockets and spring compartments, and finish bores valve guide holes and valve insert and spring seats. The whole operation takes only 45 seconds!

Ten precision-built Howell motors, ranging in size from one to 30 H.P., were specified

to drive the spindles, the hydraulic and coolant pumps, and the chip and fixture conveyors. Each Howell motor was chosen to fit its job exactly.

Howell engineers will be glad to work with you, too, to get top performance from your electric motor installations. They will design special motors if required, or recommend Howell motors in standard NEMA frame sizes from 1/6 to 200 H.P. So, for every job, especially your toughest ones, get in touch with the Howell representative in your city, or write directly to us today.

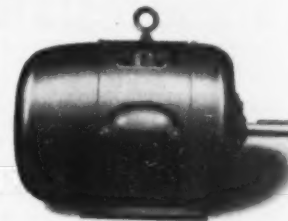
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HOWELL Type K Motor. Offers constant performance in the presence of dirt, dust, fumes and moisture. Sizes from 3 to 150 H.P. at 1800 R.P.M. Either vertical or horizontal mounting.



HOWELL Sanitary Motors meet the most exacting standards of the dairy and food industries. They contain no pockets, cracks, or crevices. Available for vertical or horizontal mounting.

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## Govt. Bulletin Gives Basic Tax Information For Small Businesses

WASHINGTON, D. C.—The principal types of Federal, state, and local taxes and tax laws which must be considered in planning or operating a small business are summarized in a bulletin issued recently by the Office of Small Business of the National Production Authority.

The bulletin, titled "Basic Tax Information for Small Business," is designed to assist operators and prospective operators of small manufacturing, distributive, and service firms, it is explained.

It discusses Federal income taxes upon business owners as individuals and upon corporations, withholding of Federal income and social security taxes from employees' wages, important changes in the Social Security Act which went into effect during 1951, Federal excess profits, manufacturers' excise, retailers' excise and occupational taxes, and Federal license fees.

Other sections of the bulletin deal with state taxes, including property, sales and use, license, unemployment compensation, and income taxes, and typical local taxes such as those on property or on businesses, professions, and occupations.

Copies of "Basic Tax Information for Small Business" are available free from the Division of Printing Services, U. S. Department of Commerce, Washington 25, D. C., and from all Department of Commerce field offices, it was indicated.

## By Appointment Only

### Wholesaler's Plan Will Save Mfrs.' Agents' Time

MIAMI, Fla.—Manufacturers' representatives who call on the Berner-Peace Co., refrigeration parts and supplies wholesaler here, have been asked to give the company a week's or 10 days' notice of their impending visit, to make certain that they will see the proper parties at the company.

"We know that travel cost is high, and that the larger the number of people seen and orders received, per trip, is desired," states Paul M. Connolly of the firm's Refrigeration and Air Conditioning Dept., in a letter to representatives. "The Berner-Peace Co. is not a small organization, and several persons of authority must be consulted before orders are entered into."

"I believe all of the above emphasizes the need for all of us to know of a set time when we can get together for mutual benefits."

### Marsh Corp. Appoints Pauls

BLOOMING, Ill.—Ferdinand Pauls has been appointed assistant advertising manager of Jas. P. Marsh Corp., the firm announced. Pauls, a graduate of Northwestern University, has been active in the Marsh sales department for about 10 years.

### New Appliance Service Center

JAMESTOWN, N. Y.—The Appliance Service Center has been opened at 16 Sherman St. by Harold Lent. Lent has more than 20 years' experience in the appliance service field.

# University of Tennessee Food Research Building Has Complete Processing, Storage Facilities

## Blast Freezer, Locker Room Included In New 'Pilot Plant'

KNOXVILLE, Tenn.—It took four years of planning, constructing, and equipping to complete the Food Technology Bldg. at the University of Tennessee farm near Knoxville, and the final results provide complete facilities for research, instruction, and pilot plant operations in virtually every branch of food processing.

Extensive use is made of refrigeration for the usual applications; and in addition, two-stage equipment provides low temperatures for blast freezing on a production basis. Also, a plant of 370 lockers is installed in the building. The latter is used to study all phases of frozen food locker plant operations.

Application and installation of all refrigeration equipment was handled by the Knoxville office of the Burge Ice Machine Co., Baker distributor.

In the basement area of the building are a number of refrigerated areas. Three separate rooms, equipped with overhead hair-pin flooded ammonia coils, are designed to be maintained at -10° F. A fourth room with the same type evaporator is separately connected to a 3-hp. ammonia compressor so that this room may



CONDENSING UNITS for the University of Tennessee's new Food Technology Bldg. are Baker machines installed by the Knoxville branch of Burge Ice Machine Co.

be operated at temperatures of -25° to 25° F. for experimental work.

The blast freezer is located adjacent to the -10° F. rooms and consists of a Burge short-pass flooded ammonia bare pipe coil, and a 10-hp. fan. This combination provides freezing capacity of 750 lbs. per hour at -10° F. air to product. The product is frozen on trucks rolled into the freezer in accordance with usual commercial practice.

This freezer is provided with a separate suction line to the engine room so that either single or two-stage compressors may be applied. This arrangement permits the use of temperatures down to -45° F. for experimental freezing.

### LABORATORY KITCHEN IN BASEMENT

A modern laboratory kitchen is located in the basement area, and is completely equipped for cooking and organoleptic evaluations of foods.

The engine room is in the basement area and contains two Baker 4-cylinder 3½ x 3½ 15-hp. compressors as required for 35° F. areas; two Baker 3½ x 3½ 4-cylinder, 15-hp. compressors for the -10° F. and freezer areas, and/or second-stage operation for the Baker 5 x 4 4-cylinder 20-hp. booster used for low temperature freezer work. One Baker 2½ x 2½ 2-cylinder, 3-hp. compressor is provided for the -25° to 25° F. experimental room.

The ammonia receiver is located in the engine room together with the electrical control and starter panel. Outside this area and adjacent to it are the two vertical shell and tube condensers and induced draft cooling tower. The water circulating pumps for this equipment are also in the engine room to facilitate automatic operations when outside temperatures are below freezing.

An area in the basement, connect-

ed with an outside ramp, is equipped with holding pens for cattle, hogs, and poultry. A live-weight scale is located at the foot of the ramp leading to the slaughter room on the first floor.

### POULTRY PROCESSING LINE HANDLES 400 PER HOUR

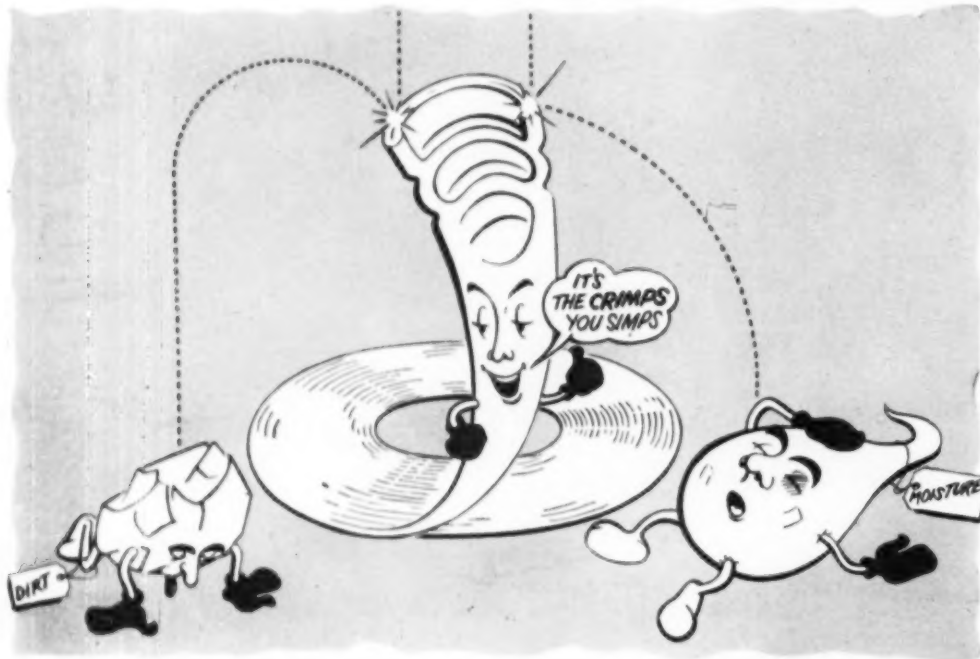
A complete poultry processing line, having a capacity of approximately 400 chickens per hour, is located on the basement floor. This processing line contains modern equipment—scalding, automatic picker, quill picker, sideline finisher, singler, washer, etc. A 35° F. room is provided for chilling poultry prior to their evisceration. Ice vats also are provided for chilling dressed poultry. A cutting area is set up so that breasts, thighs, legs, and other poultry parts, may be prepared, packaged, and placed in the blast freezer.

The pre-chill room for fruits and vegetables is located in the basement. This room is equipped with two large propeller fan room coolers of sufficient capacity to remove field heat, heat of respiration, and hold the products at 35° to 40° F. prior to processing. The three floors of the building are serviced by an elevator of two tons capacity to effect delivery of products and equipment to the desired areas.

### LOCKER PLANT AND MEAT CUTTING AREA

On the main floor of the building are located the locker plant, meat cutting area, locker plant freezer, and refrigerated display cabinets. Refrigeration in the locker room is obtained with 1½-in. bare pipe coils over the aisles spaced on 6 by 6-in. centers to eliminate frequent defrosting. The locker freezer uses a flooded ammonia fan chiller, constructed with

(Concluded on next page)



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dirt and moisture it's a soft touch when it comes to bending. The soft temper of the copper used in Dryseal allows you to make the most intricate bends by hand. And its ductility and soft temper make it extremely easy to flare for compression fittings without danger of splitting. Economical tube sizes range from ¼" to ¾" O.D.

And, for your greater convenience we have just recently brought out Dryseal in a nifty-50 one-coil carton. This carton, which has been attractively designed for easy identification in stock, contains one 50-foot coil of Dryseal... is easier to handle, light weight, economical.

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Get the details on DEAN Cold Plates for ice cream cabinets, locker plants, soda fountains, farm milk coolers, farm freeze cabinets, low temperature test rooms, frozen food refrigerators, window displays, food counters, refrigerated transportation and subzero applications for industrial chilling.

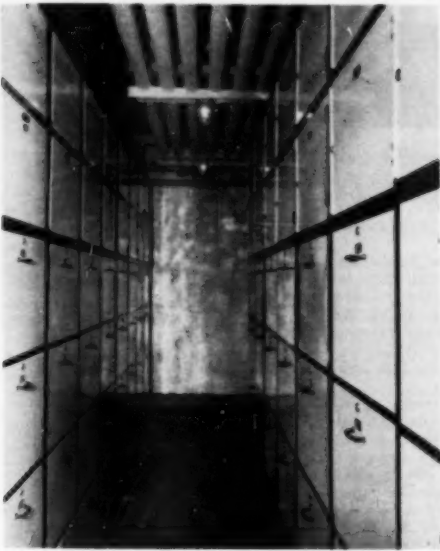


## DEAN COLD PLATES

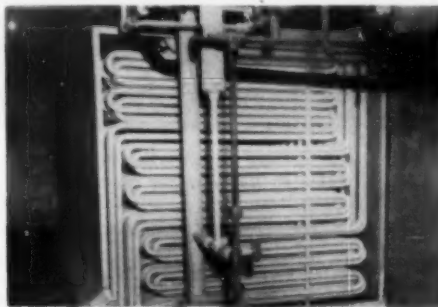
ANY SIZE  
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MOST METALS

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Sterling 9-5400





LOCKER ROOM to be used for experiments contains 370 lockers for storage of foods frozen at plant.



BLAST FREEZER located next to -10° F. rooms consists of Burge short-pass flooded ammonia coil.



CHILL and aging rooms in slaughtering department are cooled by Burge "tween rails" chillers.

room temperature returns to normal, the thermostat shuts the by-pass solenoid returning the operation to the control of the suction pressure valve.

This system has proved to be most satisfactory, producing maximum cooling rate when required, yet preserving the designed humidity conditions under light loads.

Chilled carcasses pass into the aging room which is also chilled by Burge "tween rail" units and after a suitable aging period move either to the locker room processing area, or to the meat cutting instruction room.

On the mezzanine area a conference room is provided. This area is so located that the slaughter room on the floor below may be observed through a glass partition.

#### STRAWBERRY PROCESSING

A complete strawberry processing line is set up on the mezzanine floor, with a modern shaker washer, inspection belt, slicer, and sugar mixer arranged to pack either sliced or whole berries. Packaging equipment, including a sealer and an over-wrap machine, prepares 1-lb. packages for the freezer. Packages are placed on trays of trucks and move down the elevator to the basement and into the blast freezer. After freezing, the packages are cased and placed in -10° F. storage.

Another interesting feature is the in-plant chlorination equipment which permits break point chlorination of water supply for process washing and cleaning of equipment and floors.

In the building are two laboratories—chemistry and bacteriology—for research and instruction in quality control of foods.

## Iron Plating Process Restores Sliding Parts

OLEAN, N. Y.—What is claimed to be the first commercially practical way of plating pure iron on either iron or steel has been developed and is being patented by Dr. Hendrik Van der Horst, president of the Van der Horst Corp. here.

Van der Horst claims that his method of plating worn sliding parts in industrial machinery with electrolytic iron costs about one third less than re-machining and eventually replacing the parts.

He calls his process "Vanderloy 'M'" and says it is basically the same as that used for replating silverware. Worn parts are immersed in a plating bath in which iron exists as positively charged atoms, or ions. By making the immersed part become the negative pole of an electric current, the iron moves out of solution and regains its metallic form. Then it combines atomically with the surface being plated.

The pure, electrolytic iron can be built up over the worn part to any strength or thickness desired, according to Dr. Van der Horst.

Vanderloy "M" is already being used to restore power and compressor cylinders for a number of different industries.

#### Perfex Distributor Appointed

MILWAUKEE—R. B. Dunning, Bangor, Me., has been appointed distributor of Perfex heating controls for all of northwestern Maine from Waterville and Rockland north to the Canadian border.

## Food Research Building Uses Refrigeration Throughout--

(Concluded from preceding page) all prime surface and equipped for water defrosting.

At the rear of the locker room is a refrigerated (-10° F.) overflow storage space that is cooled by means of a bare pipe hair-pin flooded ammonia coil. Adjoining this storage room is a freezer using a bare pipe flooded ammonia fan chiller equipped for water defrosting. This freezer also has a separate suction line to the engine room and may be used with the booster two stage, or as a single-stage operation. Its freezing capacity is 200 lbs. per hour.

Entrance to this freezer is from the fruit and vegetable processing area on the main floor. In this laboratory are machines for washing, snipping, peeling, grading, blanching, filling, exhausting, sealing, and retorting of fruits and vegetables. By proper arrangement this equipment serves for processing a wide variety of products. All these facilities provide for instruction and experimentation in the fields of canning and freezing preservation of foods.

The receiving platform at the rear of the building communicates directly with the fruit and vegetable processing area, and through the main corridor with the animal slaughtering laboratory, and by the elevator to floors above and below.

#### ANIMAL SLAUGHTERING LABORATORY

On the main floor is located the animal slaughtering laboratory. Animals to be processed pass through the basement holding pens, over the live-weight scale, up the ramp to the slaughter room. Complete equipment is provided for processing cattle, sheep, goats, and hogs. A modern scalding and dehairing machine is part of the hog equipment.

After processing, all meat passes over the dressed weight scales into the chill room where Burge "tween rails" room chillers remove heat. A special feature of this area is the control system. A suction pressure valve maintains evaporator pressure at design conditions. The suction pressure valve is arranged to be

by-passed by opening a solenoid valve under command of a separate thermostat set about 4° to 5° F. above the normal temperature control. By this arrangement the suction pressure can be lowered to line pressure when a large cooling load is present in the room.

When this load is satisfied and

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**MINNEAPOLIS**

"Marsh meets our needs supremely well," says Frank R. Pond (right) president of Refrigeration & Industrial Supply Co.

**NEW ORLEANS  
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"Marsh exclusively here," says Iddo W. Lompton (right) partner and general manager, Enechs Sales Company.

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The story is the same all over the U.S. Here are a few of the scores of wholesalers who all say in effect "We like the line our customers like." There is one near you handling the full line of Marsh testing instruments, gauges, thermometers; also Marsh-Electromatic regulators and solenoid valves.

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"They DO pick Marsh," says Jim Downs (right) president of Refrigeration Supplies, Inc.

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CLEVELAND  
COLUMBUS, TOLEDO**

"Our customers sold us on Marsh," says John Blair (left) of Williams & Co., Inc.

**INDIANAPOLIS  
FORT WAYNE  
SOUTH BEND  
EVANSVILLE  
LOUISVILLE**

"Marsh speaks our customers' language," says F. S. Langenkamp Jr., (center) of F. H. Langenkamp Co.

**LOS ANGELES**

"Marsh has made a lot of friends for us," says Bob Shaw (center) manager of Authorized Supply Co.

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"They must like the Marsh line the way they go far it," says Bill Davidson (center) general manager of Hinshaw Supply Co.

**CHICAGO**

"It's a pleasure to sell equipment that stays sold," says Bill Kramer (right) of Chase Supply Co.



Series of warehouse showing Kramer Thermobank units.

## Thermobank System Provides Automatic Defrosting And Holds -5° Temp. In Frozen Food Warehouse

OAKLAND, Calif.—A Kramer "Thermobank" system is providing automatic defrosting and maintaining a room temperature of -5° F. in the frozen food warehouse of the A. Levy and J. Zentner Co. here.

Installed in a specially designed and built freezer storage warehouse by Frieser-Lorentzen Co. of Oakland, the Thermobank is used with two 7½-hp. York "Freon" compressors. Both the Kramer and York units were furnished and installed by the Sealena York Co. of San Francisco. The Robert H. Holland Co. of San Francisco and Los Angeles represents Kramer in California.

The warehouse provides frozen food storage facilities for more than 500

retail customers of the Levy & Zentner firm. It measures 25 by 100 by 10 ft. and has a freezing unit of some 6,000 sq. ft. Cooler space is insulated with corkboard throughout and has a capacity of 12 to 14 carloads of frozen foods per month.

The patented Thermobank system is used in the freezing equipment and does not require external source of energy. It defrosts the coil from the inside and leaves a clean, dry coil, pan, and drain line. The Kramer Trenton Co. states.

Kramer officials add that there are no restrictions between the evaporator and compressor. This permits the compressor to operate at maximum capacity.

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## Current Literature Available

To obtain further information on the literature listed below, please refer to key number preceding listing. Please use the "Information Center" form on "What's New" page.

### Rocke International Issues Spanish Buying Guide

—KEY NO. N-210—

NEW YORK CITY—A Spanish-language buying guide and technical manual for Latin American refrigeration specialists, believed to be the first handbook of its kind, has been published by Rocke International Corp.

The 160-page catalog and manual contains technical descriptions and illustrations of many American brands of refrigeration and air conditioning equipment, components, and accessories. Also, 31 pages are devoted to detailed information, troubleshooting charts, and tables for installation engineers and servicemen.

The handbook will be sent free upon request to all recognized business firms in the refrigeration and air conditioning fields.

### Servicing Basis Pilots Is Subject of Manual

—KEY NO. N-211—

MILWAUKEE—Servicing of Basis automatic safety pilots is described in a new 100-page service manual just published by the Milwaukee Gas Specialty Co. here. The manual is being distributed free of charge to all servicemen in the gas appliance field.

The book is divided into sections covering Theory of Operation, Description of Basis Safety Pilots, Disassembly and Repair Procedures, Service Suggestions, and Parts Catalog.

The general purpose of the book is to familiarize servicemen with the proper checking of Basis valve performance as related to the many service problems encountered in the field.

### Catalog Gives Details on New Ventilating Hoods

—KEY NO. N-212—

GLENDALE, Calif.—"The Best Way To Ventilate A Kitchen" is a four-page catalog giving details on the newly redesigned Stanthony ventilating hoods made by the Stanthony Corp. here.

The booklet shows photographs of the two new styles, modern and copper provincial, and gives ranges of colors available with complete specifications of the hood and blower units.

The new hoods fit under standard cabinets over the range. Roughing-in details and dimensions are given for under-cabinet installation with standard venting through one half of a cabinet.

### Climatemaker Simplifies Heat Loss Book

—KEY NO. N-213—

BLOOMINGTON, Ill.—Research among residential heating equipment dealers in the past six months has proven "heat loss estimates do not have to be complicated and overly technical to attain satisfactory ac-

curacy," according to the Biddle Co., advertising agency for the Climatemaker Heat Loss Calculator Co. here.

The research department of the agency has just completed revising the Climatemaker Co.'s instruction book on the use of its heat loss computer.

"The Climatemaker computer itself was designed to eliminate 11 steps in heat loss calculating and to do away with the many technical, complicated reference books and charts which dealers consider time-consuming and expensive for use in everyday work," Mrs. V. M. Whitmer, president of the company, stated.

"What we didn't realize was that our own book of instructions had also become technical; when research bore this out, however, we immediately decided to do it over."

"The new book has been entirely redesigned, illustrations have been added and the copy rewritten in plain language so even a youngster can understand and apply what he reads."

The book now includes a sample heat loss problem on an average 9-ft. by 12-ft. room with answers for each step so the dealer can check his calculation on a theoretical case first. An example on "how to figure cost of heating per season" is also included in the book.

The one chart needed to use the heat loss computer has also been revised and simplified along the same lines.

### Schaefer Prints 3rd Edition Of Service Manual

—KEY NO. N-214—

MINNEAPOLIS—The third edition of the Schaefer refrigeration service manual is now available for distribution, according to A. H. Rose, vice president in charge of sales of Schaefer, Inc.

Illustrated with photographs and diagrams, this new service manual contains more than 100 pages. In addition to giving complete information on Schaefer products, it has a large section on the principles of refrigeration and includes a glossary of refrigeration terms.

Copies of the service manual are available to all interested parties.

### Booklet Guides Planning Electrical Living Homes

—KEY NO. N-215—

PITTSBURGH—A new 20-page booklet (B-5470) on planning electrical living homes is now available from Westinghouse Electric Corp.

The kitchen and laundry, which probably utilize more electrical equipment than other rooms in the modern home, are considered separately, while over-all considerations include information on lighting, heating, and wiring, the company said.

How to select, group, combine, and fit equipment for the modern kitchen and laundry are discussed, employing several photographs and diagrams of possible installations.

Several types of lighting are presented, along with photographs and drawings of applications.

### Trane Catalog Discusses Torridor Unit Heaters

—KEY NO. N-216—

LA CROSSE, Wis.—Selection and application of Trane Torridor blower type unit heaters are explained in a revised 56-page catalog published recently by The Trane Co. here.

The new condensed bulletin provides complete capacity information and performance data on Torridors with capacities from 100,000 B.t.u. to 1,500,000 B.t.u.

Torridors are used most frequently to heat large spaces where air must be spread over great distances, such as in factories and warehouses. Serving both as heating and ventilating units, they can be used for a wide variety of special and process applications, such as fog removal.

Models described in the bulletin deliver heat from floor, wall, or ceiling, directly or through ducts. The bulletin graphically shows 10 different outlet arrangements, optional dampers, mixing boxes, and wall intake boxes and filters. Write for DS-327-A, available from The Trane Co.

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WORLD'S LARGEST MANUFACTURERS OF REFRIGERATION CONTROLS



# Refrigeration Problems and their Solution

by Paul Reed

For Service and Installation Engineers



Paul Reed

## New Refrigerant— Carrene 7

Until about 30 years ago, there was little choice in refrigerants. Ammonia was used for almost everything, but carbon dioxide was quite popular, too, especially where the safety factor predominated, such as on shipboard, in institutional applications, and for low temperature work. Sulphur dioxide was also used in the smaller units where low condensing pressures were desirable.

These were just about all the refrigerants that were available or commonly used. Equipment design was quite limited, especially compressor design; for the equipment had to be designed around one of those three refrigerants. For example, compressors for low temperature work either had to have very large displacements for ammonia, or be of extremely heavy construction for carbon dioxide. The suction pressure for sulphur dioxide at low temperature was on such a low vacuum that SO<sub>2</sub> was not suitable.

The availability in this country of methyl chloride about 1920 started a new trend in refrigerants, known as the halogenated hydrocarbons, sometime shortened to the term halocarbons. In the late twenties "Freon-12" appeared, followed by a whole family of "Freon" that have just about taken over the low pressure field.

The halocarbons are formed of carbon, to which is united in various chemical proportions, one or more of a class of chemicals known as halogens. There are five halogens: chlorine, fluorine, bromine, iodine, and cyanogen. Of these five, chlorine, fluorine, and bromine are the ones used mostly, for the latter two, iodine and cyanogen have less desirable properties; hydrogen is also included in some of the halocarbons, along with the carbon and one or more of the halogens.

By "mixing" carbon and the halogens, sometimes including hydrogens, in various proportions, the chemists have been able to come up with numerous possible refrigerants, some of which are in widespread use and commercially available. Some of the

others are known, but are awaiting some specific and popular need that will warrant the expense of setting up to manufacture them in quantity.

Today we are inclined to take all of these relatively new refrigerants for granted, without fully realizing the importance that they have played in the development of the refrigeration industry. Modern mechanical refrigeration, as we know it, would not have been possible without the halocarbon refrigerants.

Refrigerants, old and new, vary but little in "efficiency" and horsepower-per-ton. With a few exceptions, their horsepower-per-ton are within 5% of one another. The halocarbons have become popular, not because of increased efficiency, but because they are much safer—less flammable and less toxic; because they are odorless or nearly so; because they are soluble in oil, which simplifies oil return and increases the ease of installation; and because they are more stable and less inclined to chemically attack or be attacked by materials of which the equipment is made and by water, oil, air, or other substances that may get into the systems.

### CHOOSE REFRIGERANT; THEN DESIGN EQUIPMENT

Moreover, there are now enough refrigerants that we can choose the one most suitable for a certain range of temperatures or type of equipment, and then design the equipment around the chosen refrigerant. The flexibility afforded by a choice of refrigerants has been a great advantage in improving equipment design and its application to various uses.

So the usual course is to choose one of the known and available refrigerants with properties best suitable to a particular temperature range and other requirements, and then design the equipment around that refrigerant.

A reverse set of conditions, where a type and size of existing equipment require a refrigerant to match the equipment, has led to the development of a new refrigerant. Not only has it led to the development of a new refrigerant, but to a new type of refrigerant, known as an azeotrope. This type of refrigerant, while previously known to chemists, has

never before been utilized. It may be the means of opening another field of refrigerants, and the method used in developing this particular azeotrope may facilitate future development of other azeotropes.

### 50 CYCLES REQUIRES 1/2 LARGER COMPRESSOR

The circumstances that led to the search for this particular refrigerant and to its development, were somewhat as follows:

Here in the United States, our electric current is almost universally 60-cycle alternating current. This automatically fixes the speed of induction type motors, which comprise practically all the motors used to drive compressors.

The frequency, 60 cycles per second times 2, gives 120, which is the number of alternations per second;  $120 \times 60 = 7,200$  which is the number of alternations per minute. If we divide this 7,200 by the number of poles in the motor, we get the "synchronous" speed in revolutions per minute.

The actual load speed of "constant-speed" type motors is usually about three or four per cent less than

synchronous speed. The 2-pole motor, therefore, has a synchronous speed of 3,600 r.p.m. ( $7,200 \div 2$ ) and a load speed of about 3,450 to 3,500 r.p.m. A four-pole motor, which is the most commonly used induction motor, has a synchronous speed of 1,800 r.p.m. ( $7,200 \div 4$ ) and a load speed of 1,725 to 1,750 r.p.m. A six-pole motor has a synchronous speed of 1,200 r.p.m. and a load speed of 1,120 to 1,140 r.p.m.

In countries outside the United States, the most common a.c. current is 50-cycle. On 50-cycle current, a 4-pole induction motor has a synchronous speed of 1,500 r.p.m. ( $7,200 \div 2 \times 60$  or  $6,000 \div 4$ ), or a load speed of about 1,425 to 1,450 r.p.m. A two-pole induction motor on 25-cycle current would also have a synchronous speed of 1,500 r.p.m. and a load speed of about 1,425 r.p.m.

This means that if a manufacturer of a 1-hp. refrigerating machine in this country builds his compressor to have the right displacement when driven by a 60-cycle 1,725 r.p.m. motor, it would lose about one sixth of its displacement and capacity when driven by a 50-cycle 1,425 r.p.m. motor. Moreover, the motor would only be five sixth loaded.

Many U. S. manufacturers of refrigerating machines do a good export business, so in order to enable the 1-hp. condensing unit to keep its full capacity, a one fifth larger motor pulley is used to speed up the compressor so as to get it back to its original displacement and capacity that it had with the 60-cycle motor.

This works out very very well for most belt-driven units, but not for the direct-drive hermetics. With them the compressor speed has to be al-

lowed to drop from 1,750 to 1,425 r.p.m. (approx.) and take the loss of one sixth of its capacity; or the compressor for use with the 50-cycle motor has to be a little larger, that is, with a one fifth greater displacement. Not often does the manufacturer have a compressor just that size, so he is forced to make one with a larger bore or stroke or both, to give one fifth greater displacement.

This condition is true for all sizes of condensing units,  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , etc., for the full line of hermetics. Export sales are much less than U. S. sales, and the cost of making all these extra size compressors is prohibitive in view of the lower volume of sales.

### ANOTHER REFRIGERANT INSTEAD OF GREATER DISPLACEMENT

There is one other way that it can be done—to develop a refrigerant that would give the same capacity at five sixths speed and displacement on 50-cycle that "Freon-12" gives at full speed on 60-cycle.

Under standard ton conditions of 5° evaporator and 86° condensing, the "theoretical" displacement for "Freon-12" is 5.81 c.f.m. for a 1-ton unit. Therefore, a refrigerant is needed that under standard ton conditions, has a "theoretical" displacement of five sixths times 5.81 or 4.84 c.f.m.

Unfortunately, there was no known refrigerant that had just that displacement. (Actual displacements would be about one fourth greater than the "theoretical," but the comparison is still true, for the proportion would still be about the same.)

(To Be Continued)

## Mr. A. M. SCHWARTZ

President, A. M. Schwartz, Inc., Cincinnati, Ohio



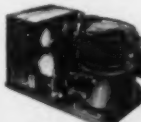
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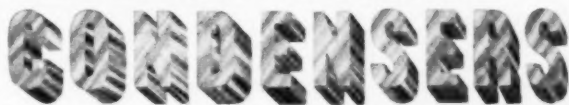


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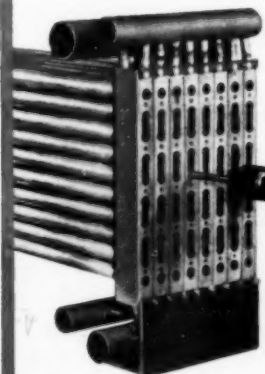


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## Servicemen's 'Unseen Enemies'

Industrial Chemist Tells RSES Convention How To Recognize  
And Cope with Troublesome, Hazardous Problems

CHICAGO—In order to deal intelligently with his "unseen enemies," the refrigeration service engineer must "recognize them, understand their symptoms, and apply the proper remedy or he is soon out of business," Dr. Walter G. Walker, now doing industrial chemical research at the University of Miami, told the Refrigeration Service Engineers Society at its annual convention here recently.

Some of the unseen enemies, Dr. Walker declared, are troublesome but not hazardous, while others are both troublesome and hazardous. He then reviewed these dangers, pointing out their nature and then their cure. He dealt first with sources of trouble where little or no hazard is involved. This is what he said:

"The chief single source of trouble for the factory and service engineer is moisture. It is normally an unseen and always an unwelcome enemy.

### How Moisture Gets Into System

"Moisture gets into refrigerating systems as the result of (1) faulty drying at the factory or during service operations; (2) introduction during assembly or service in the field; (3) low-side leaks; (4) oxidation of oil; (5) wet oil or refrigerants; and (6) decomposition of motor insulation in hermetically sealed units.

"The effects of moisture are many and varied: (1) freezing of the expansion valve or capillary tube; (2)

formation of sludges due to corrosion of metals; (3) flapper valve failure; (4) copper plating; and (5) chemical damage to insulation.

"The remedy for moisture trouble is obviously to exert every care to keep moisture out of a system and when it gets in, to remove it by drying the equipment, if this is possible, or through the use of a drier.

"Methyl alcohol probably should not be included in the unseen enemies since it is normally deliberately put in a machine to overcome a frozen expansion valve or capillary tube.

"Methyl alcohol is an anti-freeze and, if used at no more than 1% by volume, does an efficient job.

"But no one ever seems to want to limit methyl alcohol to this seemingly too small quantity. So he puts in much more with the result that in a few months the iron and copper of the machine corrode and sludges are formed with all of their resultant difficulties such as frozen pistons, corroded and stuck flapper valves, plugged expansion valves and capillaries, and plugged screens.

"An excess of methyl alcohol produces, as far as can be determined, much more sludge than would have been formed by the water whose effect it was supposed to counteract.

"Remember methyl alcohol will corrode metal parts and in no way reduces the corrosive action of the moisture in the machine.

"Any one adding excess methyl alcohol is much worse off than if they had faced the immediate difficulty of a frozen expansion valve or capillary tube and by the correct use of a drier eliminated the moisture by removing it from active participation in the affairs of the machine.

"Probably one of the least understood happenings occurs in some cases where methyl alcohol is added to a system with a drier unit in the liquid line.

"On addition of methyl alcohol the expansion valve or capillary tube may freeze up. This happens because the methyl alcohol takes the place of the moisture in the drier, thus liberating the moisture and causing a freeze-up.

"This occurs only when, by chance, just enough methyl alcohol has been added to liberate the water, but not enough to act as an anti-freeze.

"About the only advantage obtained by the addition of excess methyl alcohol is that this moisture does not cause a freeze-up. However, in due time, corrosion sets in with all of its attendant troubles.

### Symptoms of Air In System

"Air, in a refrigerating system, produces a very obvious effect; high head pressures. Now high head pressures usually are accompanied by excessively high compressor temperatures. Air at higher temperatures

oxidizes the oil with the result that the oil may darken and deposit sludge.

"In addition, it may thicken and not lubricate well. Oxidation of oil results in moisture formation, with resultant freeze-ups. Normally high head pressures are noticed and the air removed by purging.

"High compressor temperatures may be found quite frequently and they always, if allowed to exist for even a few days, result in a darkening of the oil, an increase in viscosity, and the formation of sludge.

"This can occur even in the absence of air but a somewhat higher temperature is required than when air is present. Once high compressor temperatures are maintained for a sufficient period of time, the oil breaks down completely.

"An extreme example of oil breakdown resulted in the compressor head being filled with solid, honeycombed, carbonized oil. Needless to say, the compressor did not function well. In fact, it required a complete overhauling.

"It should always be remembered that no matter how good the refrigeration oil, it will not stand excess temperatures (140-160° F.) for any length of time. Obviously, a poor oil is broken down more readily than a good one.

"In all oil breakdowns, in the presence or absence of air, the acidity is increased and results in corrosion of the metals of the system.

### Servicemen Must Count on Oil Dealer's, Producer's Reputation

"A poor oil is one of the worst enemies of the service engineer. Lacking the means of checking an oil except by looking at it or rubbing it between his fingers (neither is really of any great help), he may be victimized by any sharp operator.

"However, oils procured through ethical dealers from companies having reputations for furnishing a good product will guarantee a good oil and a good performance.

"Poor oils break down more readily than good ones, forming sludges, increasing in viscosity, and becoming acidic with resultant corrosion of the metals of the system. Use a good oil and eliminate this hidden enemy.

"Most every one is familiar with the fact that certain oils contain paraffin waxes. When the oils are dissolved in the "Freon" or methyl chloride and the mixtures cooled sufficiently, wax separates and produces a freeze-up at the expansion valve or capillary tube.

"These freeze-ups are similar to those produced by moisture except they occur at lower temperatures. What can be done about this situation? Select a wax free oil, particularly for low temperature work, or use an oil separator.

### Marking Dirty and Clean Cylinders Advised

"A dirty service cylinder can be the cause of untold trouble. It is a hidden enemy for no one can look at the outside of a cylinder and tell whether it is dirty or clean inside.

"The valve must be removed and the inside of the cylinder inspected. If it is dirty, it must be cleaned by suitable methods.

"As a matter of sound practice, clean cylinders should be reserved at all times for the transfer of clean refrigerant. Other cylinders should be used for dirty refrigerant and at no time should these cylinders be used interchangeably.

"It is advised that they be painted different colors or stenciled to show their contents.

"Plenty of good drier units are available and when properly used, they will pick up the moisture in a refrigerating system. Actually a drier does not become an unseen enemy until it is misused or improperly assembled.

### Special Knowledge Needed To Fill Own Driers

"As a general thing, a factory packed unit, properly installed, or one properly assembled in the shop, will do the trick. However, units filled in the shop, without first reactivating the drier, may become a great source of trouble.

"A drier, poured from a can, may pick up enough moisture to ruin it. If you fill your own drier units, first reactivate the drier, and then put it in the unit while hot.

"A service engineer can, if he possesses the necessary know how, put up his own drier unit. However,

lacking proper knowledge, he can get into an awful mess.

"A number of years ago, some of our service engineers got the idea that a drier was taking up a lot of moisture because it sometimes heated up when the refrigerant first entered the drier unit.

"This was a false conclusion since tests proved that the heating of the unit was caused by adsorption of the refrigerant on the surface of the drier.

"A drier will heat up when moisture comes in contact with it; however, there isn't enough moisture in the average machine to create any noticeable heat effect.

"Don't be fooled into thinking that the drier is taking up moisture when it heats up, for both silica gel and activated alumina become quite warm due to adsorption of the refrigerant.

"On the other hand, if Drierite is involved, it will not heat up at all for the drier does not adsorb refrigerant and the amount of moisture is usually too small to cause a heating effect.

"Don't under any circumstance throw out a unit charged with Drierite, because it does not heat up during use."

### Methyl Chloride In Contact With Aluminum

The remainder of Dr. Walker's discussion dealt with the unseen enemies creating both trouble and hazards.

"A great many service engineers discovered, during the 'Freon' shortage of World War II, that methyl chloride, charged into a machine containing aluminum, created a lot of trouble as well as hazard.

"Indeed, in one case at least, the action of methyl chloride on aluminum resulted in the production of a neat worm hole through an aluminum head gasket, causing a rapid leak of the refrigerant into a confined space.

"The victim was a janitor, who came down into the basement, turned off the switch, thus producing a spark that set off the methyl chloride with the result that the man lost his life.

"There are numerous other cases fortunately not resulting in fatalities, in which aluminum coils or pistons were destroyed by the action of methyl chloride.

"This reaction is much more  
(Continued on next page)

What the  
serviceman  
should know  
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## Coping with Unseen Service Problems--

(Continued from preceding page)  
troublesome than a simple case of corrosion because the products formed are spontaneously flammable on contact with air.

"Servicing of these units consists essentially in the removal as a liquid of all refrigerant and oil followed by a thorough flushing with water.

"Be sure and do all this out in the open or in a well ventilated area. Incidentally there is no evidence that this reaction can cause an explosion in a machine, although we did manage to move the laboratory wall a couple of inches due to the explosion of a cylinder containing aluminum and methyl chloride.

"There is no indication that the 'Freons' react with aluminum for thousands of units containing these two have been operating for years without the slightest indication of an action taking place.

### RSES Has Been Sounding Warning on Electrical Equipment

"George Schulz, RSES safety director, has been warning for years to be careful when dealing with electrical equipment. Just recently a service engineer in Miami, father of 10, was killed while working on an air conditioning unit.

"In some way, he contacted a hot line and died almost instantly because he was grounded. Electricity is a killer—be careful—be intelligent in handling it.

"Goggles should be worn while handling liquid refrigerant whenever and wherever there is a possible chance of the liquid coming in contact with the eyes.

"This applies when liquid lines are broken, during removal of expansion valves, or drier units, removal of liquid refrigerants from inverted cylinders, opening liquid receiver valve, etc.

"There are two possible effects on the eyes: (1) chemical action, and (2) freezing.

"There is no chemical action with methyl chloride, the butanes, and the 'Freons.' Ammonia and sulphur dioxide are irritants and can damage the eyes.

"Since to this action may also be added freezing, the care of a physician is absolutely essential. Don't try home remedies. Proper care may save the eyesight.

"When liquid refrigerant comes in contact with the eyes or the skin, it evaporates and freezing will result if the amount of evaporated refrigerant is sufficient.

"Any refrigerant may do this, although those that have no toxic action do not cause quite as serious damage as may result from sulphur dioxide and ammonia.

"In any event, the experience is painful and even dangerous so exert every care in handling liquid refrigerant and, if exposure does occur, administer first aid and get a competent physician just as soon as possible.

### Liquid Refrigerants Expand, Contract with Temperature

"All liquid refrigerants expand on heating and contract on cooling. This characteristic of liquids in general is made use of in the construction of thermometers.

"Although liquids contract readily, without a drop in temperature an enormous pressure is required to produce the same contraction in volume.

"So when a cylinder, liquid line, or drier unit is filled with liquid refrigerant and the temperature increased, the volume becomes greater due to the temperature effect and the pressure created in the containing equipment goes up rapidly.

"For each 18° F., liquid pressures increase approximately 1,800 p.s.i. or 100 lbs. per degree. The damage from exploding equipment can be great.

"Because of the necessity of allowing for liquid expansion, refrigerant cylinders are not filled completely; the extent of filling is regulated by ICC. Few cylinders are stamped to show the weight of refrigerant they can safely contain.

### Determining Cylinder's Capacity

"The following method may be employed to determine the maximum amount of refrigerant a cylinder or other vessel may safely hold.

"Remove the valve and weigh the vessel and valve; then fill the vessel with water and weigh again. The weight of the water is called the water capacity of the cylinder.

"In order to find the weight of refrigerant permitted in the cylinder, the water capacity is multiplied by a factor which depends on the refrigerant.

"This is .85 for methyl chloride, .12 for 'Freon-12,' and 1.25 for sulphur dioxide. Thus, if the water capacity is 100 lbs. and the factor is 1.2, the cylinder can safely hold 120 lbs.

"If the cylinder is filled with the calculated quantity of refrigerant, it may be subjected to a considerable increase in temperature before expansion fills it with liquid, thus creating dangerous hydrostatic pressures.

"Refrigerant cylinders, with the exception of the service type, are equipped with either a pressure release valve or fuse plugs designed to melt at 165° F. Of these two devices, the pressure release valve is preferred since hydrostatic pressure cannot build up even if the cylinder is over-filled.

"If a cylinder, equipped with a fuse plug, is properly filled, there is no danger due to overheating for the plug will melt and release the pressure. However, an overfilled cylinder may develop dangerous hydrostatic pressures well below the melting point of the fuse plug.

"Another disadvantage of the fuse plug is that once melted, it allows all the refrigerant to escape, whereas the pressure release valve is presumed to close once the excess pressure is released.

"As a normal thing, it may be safely assumed that a factory filled cylinder, or one filled under competent supervision by a jobber, will not be overfilled.

"The service cylinder has no fuse plug or pressure release device and it therefore presents a real hazard since it is the most often overfilled type cylinder.

"With no safety device, it can build up dangerously high hydrostatic pressures. Many kitchens and cars have been wrecked by an overheated, overfilled service cylinder.

"If there is one place the RSES should use its influence, it is to demand that all service cylinders be equipped with a pressure release device and that as speedily as possible pressure release valves be substituted for fuse plugs.

### Sound Safety Advice

"A few practical suggestions are in order:

1. Don't overfill cylinders.
2. Don't overheat cylinders.
3. Don't use cylinders unless they have been hydrostatically tested within the past five years.

"A liquid line filled with liquid refrigerant, when closed off by valves at both ends can develop hydrostatic pressures high enough to cause an explosion. This hazard is increased when a filter or drier unit is in the liquid line.

"Remember hydrostatic pressure is 'dynamite' and can do terrific damage.

"A great deal has been written and said about the toxicity of refrigerants, so much in fact that every service engineer ought to know

enough about it to intelligently evaluate possible hazards he might encounter.

"Still during the war when many, whose prior experience had been exclusively with 'Freon-12,' were forced to change to methyl chloride, there were numerous cases of poisoning, all occasioned by a gross neglect of even the most elementary safety precautions.

"There were instances where men walked into and worked in rooms containing toxic quantities of methyl chloride until they got woozy. They went out for a few breaths of fresh air and then in they went again.

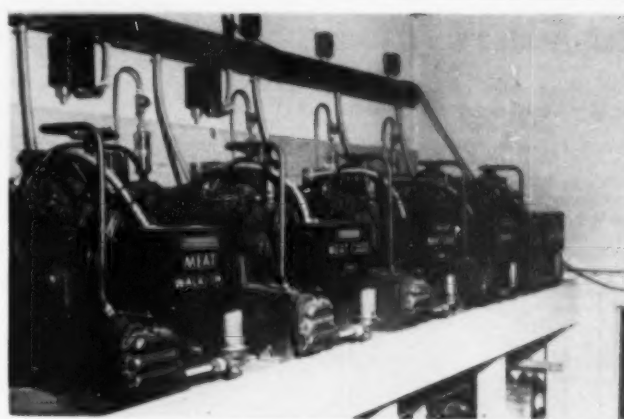
"There were a few deaths and an awful lot of very sick people. All this could have been avoided had those in question done just one thing—ventilate.

"Methyl chloride is sweet smelling and can be tolerated for too long a time; sulphur dioxide and ammonia cannot be tolerated at toxic concentrations and consequently few people are ever harmed by these latter two.

"Freon-12 and other non-toxic refrigerants are harmless, in the absence of flame, unless present in sufficient quantity to reduce the oxygen content of air below the limit necessary to support life.

"Since this requires a very large amount of refrigerant, there is little possibility of a hazard of this sort. A service engineer ought never to be harmed by a refrigerant, since he is supposed to be intelligent and above all well trained. Certainly he knows the hazard exists.

"Then why does he get hurt? Perhaps he thinks that he can take just a little bit more and is immune from the toxic effects. The refrigerant methyl chloride has a pleasant



## Effectively Installed, Neatly Labeled

GOOD APPLICATIONS ENGINEERING and expert workmanship is the subject of the above photograph. Mounting of the Servel Supermetrics on a stand seven feet above floor level, permitted the Sigman Food Stores of Walla Walla, Wash., to use the space below for storage. Labeling of the units, which serve the store's walk-ins, display cases, and air conditioners, aids the serviceman.

odor but no knockdown characteristics such as possessed by sulphur dioxide.

### What To Do for Poisoning From Methyl Chloride

"Perhaps we need to be hit in the head with a club to understand that needless exposure to a toxic refrigerant is like walking into a tiger's cage.

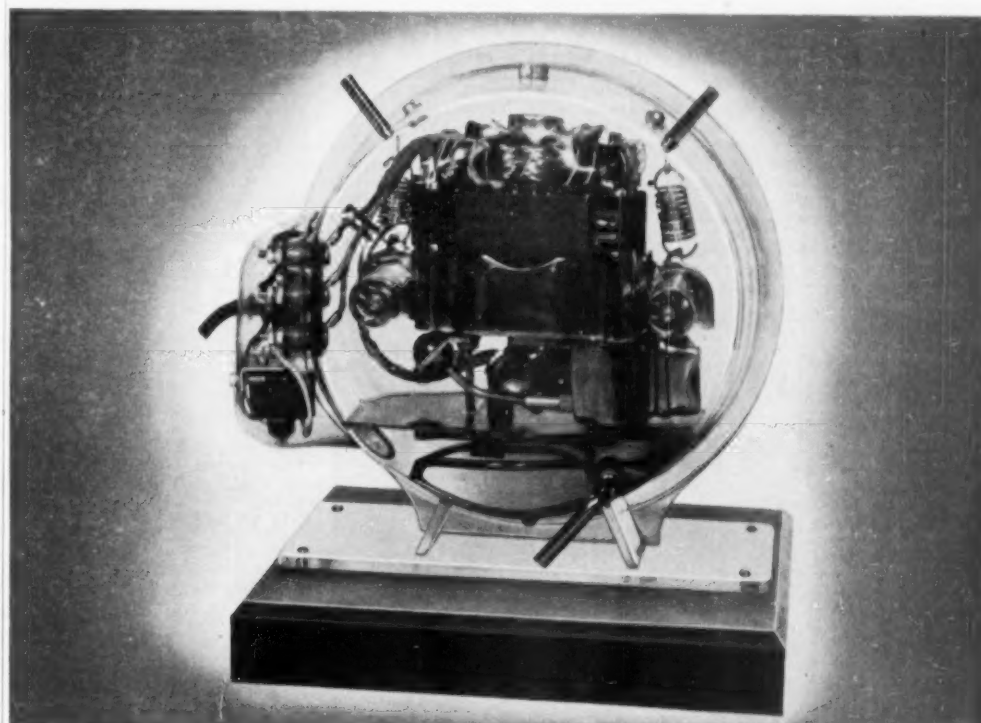
"What should be done in the event of methyl chloride poisoning? First

apply artificial respiration and immediately call a good doctor.

"If he has had no experience with methyl chloride poisoning, have him call George Schulz for directions for treatment approved by the American Medical Association.

"Don't delay—you wouldn't if a tiger had just torn the arm of a friend. A severe case of methyl chloride poisoning is much worse than the loss of an arm.

"Refrigerant poisoning can be (Continued on next page)



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## Servicemen's Problems, Hazards--

*(Continued from preceding page)*  
avoided completely if common sense is employed and ventilation is adequate. In case of doubt, ventilate and then ventilate some more. Then you will be safe and healthy.

Flammable refrigerants such as ammonia, methyl chloride, and the hydrocarbons all explode, when ignited, with varying degrees of violence.

Each has a characteristic explosive range below and above which the refrigerant, when mixed with air, will not explode on ignition. In between these limits constitutes the explosive range.

"At the lower and upper ends of the explosive range, explosions occur with little violence, although in the upper part of the range, a fire usually follows. In between the ends of the explosive range, explosions of great violence may occur. Damage to property and loss of life result."

"These explosions may be set off by an electric spark, a gas heater or stove, a blow torch, a match, a leak detector or many other sources of ignition."

"Since we cannot always control leakage, provision should be made for continuous ventilation of areas into which large quantities of flammable refrigerants may escape. Such provision is made in most codes."

"The service engineer should know which refrigerants are flammable and then have sense enough not to carry a flame into an area into which the refrigerant may have escaped."

"If there is the slightest indication that an explosive mixture is present, ventilate thoroughly and then be sure that adequate ventilation is continued."

### Ventilation Eliminates Toxicity And Explosions

"In this way, complete safety is assured, for with adequate ventilation an explosive mixture cannot be built up. This also takes care of the toxicity hazard. Remember, both these hazards, toxicity and explosions, may be eliminated by ventilation."

"The halide leak detector is familiar to every service engineer for it

has been used for many years to locate leaks of all the 'Freons' and methyl chloride."

"It is equally valuable as a means of testing for the presence of carbon tetrachloride, chloroform, and other compounds of a volatile nature, containing fluorine, chlorine, iodine, or bromine."

"Its operating principle is based on the fact that any halogen (bromine, fluorine, chlorine, or iodine) containing compound, decomposed by a flame in the presence of metallic copper, gives to the flame a characteristic blue-green color, intensity of which varies with the amount and nature of the refrigerant."

"The blue-green color is due to volatile colored chemical compounds formed from the hot copper and the products of decomposition of the halogen containing refrigerant."

"Although the 'Freon' compounds have little or no flammability, they are readily decomposed whenever they come in contact with a flame or heated surfaces of sufficiently high temperature."

"This means that the halide leak detector breaks down or decomposes all 'Freon' refrigerants and methyl chloride. It also means that any gas flame, such as a blow torch or gas heater, will do the same."

"There is little evidence that an electric stove or heater decomposes the 'Freons' and methyl chloride. Breakdown of these refrigerants by the flame of a match or a lighted cigarette, pipe, or cigar has been roundly denied by the manufacturers of these refrigerants."

"Although no test results proving this have been published, as far as the writer has been able to ascertain, we would all welcome more information on this point."

"A number of years ago, tests were conducted, using a halide leak detector with 'Freon-12' and methyl chloride which proved that gases formed during use of a leak detector are deadly if inhaled too long and most definitely harmful for shorter periods of time."

"These findings confirmed the results of the Underwriters' Laboratories using gas flames and wood and oil fires."

"It has thus been clearly estab-

lished that the 'Freons' and methyl chloride, on coming in contact with sufficient heat, do break down into deadly gases."

"The presence of these gases above a leak detector can readily be demonstrated by holding an ammonia swab several inches above the flame. Copious white fumes are formed due to a chemical reaction of the decomposition products with the ammonia."

"Those who have used the ammonia test for sulphur dioxide will recognize these fumes at once. They are so abundant they cannot be missed."

"In fact, if the area just above the flame of the leak detector is examined while the 'Freons' or methyl chloride are being picked up, white fumes may be seen in the absence of ammonia."

"In order to understand why the decomposition products are so deadly, their chemical nature should be better understood."

"When the 'Freons' or methyl chloride are drawn into the flame of a leak detector, they are completely decomposed or broken down to form varied products depending on the nature of the refrigerant."

"The 'Freons' form phosgene, hydrofluoric acid, hydrochloric acid, and some free chlorine. Methyl chloride forms hydrochloric acid and phosgene, but no chlorine. Now phosgene is toxic and so are hydrofluoric and hydrochloric acids and for that reason should be avoided."

"What are the hazards the service engineer faces as result of the breakdown of these refrigerants in flames; are they real or imaginary or of interest only to someone in a research laboratory?"

### 'Freons,' Methyl Chloride Said To Break Down Into Deadly Products

"It has definitely been proven that the 'Freons' and methyl chloride are broken down by the leak detector or other type gas flame and that the products are deadly."

"Now service engineers have used the leak detector for years without any apparent ill effect so the fumes cannot be so deadly."

"However, when the leak detector has been used in poorly ventilated rooms containing even as little as 2-3% 'Freon-12,' sufficient toxic gases have been formed to have a definitely bad effect on persons in the area."

"How many service engineers have come out of such a room feeling woozy and somewhat sick?"

"No attempt has been made to collect instances of this sort, but they do exist and many or most service engineers are acquainted with some."

"Not so long ago, several workers, it was reported, laboring in a basement where there was a 'Freon-12' leak and a gas stove were knocked out by the fumes. How many cases of this sort that have occurred, records do not show."

"In addition to the real knockdown cases, there always exists the possibility that a man using a halide lamp in a poorly ventilated area, inhales just enough fumes to make him cough, but no other noticeable ill effect results. Suppose this happens day after day."

"In view of the acknowledged toxic nature of the fumes from a leak detector, are we not in a fair way to develop an occupational hazard that may not be recognized until it is too late?"

"In the event of illness from these fumes, it is doubtful whether physicians would be familiar with proper methods of treatment. They certainly don't know too much about dealing with methyl chloride poisoning."

### Ventilate, Ventilate, and Continue To Ventilate

"Now what can the service engineer do to eliminate this hazard? He should not use a leak detector in an area known to contain the 'Freons' or methyl chloride."

"Ventilate until all the refrigerant

is removed and that escaping from the leak is kept reduced to a low limit. Ventilate, Ventilate, and continue to ventilate."

"The presence of toxic fumes shows above the flame of the leak detector as a white smoke and can be readily seen. With good ventilation, they are carried away. There need never be a hazard due to the leak detector if adequate ventilation is maintained."

"Spread the news that fumes from leak detectors are poisonous and should be avoided. Don't work in a room with them or stay in one where 'Freon' refrigerants or methyl chloride are escaping and an open gas flame or blow torch is being used. Ventilate or get out of the room."

"When a brazing or soldering operation is carried out on a pipe or tube containing the 'Freons' or methyl chloride, acids and other products are formed that corrode the refrigerating system."

"At least one large refrigeration equipment firm warns against carrying out any brazing or soldering operation until all the refrigerant has been removed from the system. This is definitely good practice and should be followed by all service engineers."

### Dr. Walker Answers Questions From The Floor

Following his talk, Dr. Walker was asked several questions from the floor.

Q.—Have you done any research in using aniline dyes to detect 'Freon'?"

A.—'Freon' is not too reactive to chemicals. Besides, you can't put dye in a system if a drier is used. The drier will pick up all the color.

Q.—Is there any material you can put in a machine to eliminate solids?"

A.—I don't think it is entirely possible to eliminate solids chemically. You have to clean out the system or strain it out to remove them.

Q.—What can I get to help an asthmatic to overcome the choking effects of sulphur dioxide?"

A.—Smelling salts are about the best remedy. But I don't know of anything really effective.

Comment from the floor: I suggest that all asthmatics be removed from the area before any sulphur dioxide is released.

Q.—I feel that 'Freon' gas has a cumulative toxic effect on the body. Is there any diet that I can use to counteract this occupational hazard? In other words, should I be a milk drinker or a whiskey drinker?"

A.—I don't know of any such diet. The only protection is to ventilate the area. Don't go into it until you do ventilate it.

### Gibson Appoints Lubenow Divisional Sales Manager

GREENVILLE, Mich.—George A. Lubenow, former vice president and general sales manager of State Distributing Co., Milwaukee, distributor for Gibson appliances in Wisconsin, has been named divisional sales manager for Gibson Refrigerator Co. in the east.

His territory, defined in his appointment by F. L. Sacha, manager of Gibson sales, includes southeastern Pennsylvania, Delaware, Maryland, Washington, D. C., Virginia, and southern New Jersey. His headquarters will be in Philadelphia.

Lubenow has been district sales manager for Proctor Electric Co. During his tenure with Proctor, Lubenow covered the entire mid-west.

## Package of 24 Sales Tools Spearheads Mitchell's '52 Promotion Campaign

CHICAGO — Spearheading the Mitchell Mfg. Co.'s 1952 air conditioner sales promotion campaign is a package of 24 sales tools designed to bring advertising and publicity directly to the dealer level, according to Howard Haas, director of advertising.

The package is made up of a selection of items illustrating the company's new line of ½, ¾, 1, and 1-ton room air conditioners. The items range from specification sheets for each model to four color window streamers and attractive consumer folders. Also included are sample publicity releases and advertising matrices for local use.

Featured are three booklets designed to show the prospective customer in the clearest possible language the exclusive features and advantages of the 1952 Mitchell air conditioner line.

One of the booklets, entitled "A Midsummer Night's Dream," is the fable of typical customer Joe Smart, and how he was convinced one hot summer day that he could have summer comfort for a fraction of the amount he spent on winter comforts for his home.

Another brochure illustrates the effects of heat on the circulatory system and the heart. Using an independent scientific survey as a basis, the booklet shows that the customer, himself, is able to work and live at optimum efficiency in an air conditioned room.

The entire packet is geared to plug Mitchell's 1952 features: the "Weather Dial," a new one-knob weather control, which allows two adjusted levels of cooling; the "Arid-Dryer" with two levels of dehumidification control; the air-scoop exhaust which can completely change the air in a room within minutes; "Dyna Cooling," a super powered refrigeration unit; and the sound muffler.

### GETS ADVANCE INFORMATION



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INTERNATIONAL HARVESTER'S top-of-the-line Model G-93-D for 1952. Girl at left operates defrosting switch.

BIG FAMILY-SIZE refrigerator is International Harvester's Model G-95 for 1952.



## I-H Line Has Once-a-Day Defrosting--

(Concluded from Page 1, Column 4) giving homemakers a choice of 11 different colors to accent their kitchen color schemes.

A gold motif has been carried throughout all models in the form of lettering and trim on freezer doors, "Pantry-Dor" shelves, and butter compartments.

Top of the line model is the G-93-D. It has "Tri-Matic" defrosting and a fully colored interior. The G-93-D also has a 50-lb. horizontal freezer, cold-to-the-floor refrigeration, a butter compartment with separate temperature control, a four-shelf "Pantry-Dor," full width chill tray, two stain-resistant porcelain enamel crispers (one full width) holding 23.3 qts., a 10.8-lb. capacity meat drawer, four shucker-type ice cube trays that freeze 7.6 lbs. of ice, a new type "Diffuse-O-Lite," a special summer-winter adjustment for cold air circulation, and stainless steel shelves.

All eight models have one-piece, all-steel, wrap-around cabinets; stain-resistant, porcelain enamel interiors, including crispers; extra large storage spaces for bottles, watermelons, and other large objects; built-in

bottle openers; floor levelers; "Tight-Wad" compressor units with five-year warranty attached to cabinet; full-length, tapered, X-braced doors with breather holes; molded, one-piece balloon rubber gaskets, and spring-loaded door latches for easy opening and closing.

Smallest model of the new line is the 7.4-cu. ft. G-74. Designed for top performance in the 7-cu. ft. class, it is the only refrigerator of its size with a real horizontal freezer, Hale pointed out. The freezer stores 35 lbs. of frozen foods.

The "Spring-fresh" green freezer door has a clear plastic "E-Z-Vu" window enabling the user to see inside the freezer without opening the door. The G-74 has 13.7 sq. ft. of shelf area, room for 25 square quart bottles, a summer-winter adjustment for air circulation, two plastic grid ice cube trays, and a 14.5-lb. capacity meat tray.

The new line, which retains many outstanding features that have been identified with International Harvester in past years, is now in production at the company's Evansville, Ind. factory.

## Cleveland Code Change Would Require Electrician To Install Equipment

CLEVELAND—The Electrical Contractors Association of Cleveland has proposed amendments to the city building code which would force refrigeration, furnace, and air conditioning installers to hire electricians to do incidental electrical work.

The amendments are being prepared for introduction to City Council.

The present code permits these installers to do their own electrical work, under final approval by city inspectors.

Bernard Friedman, Cleveland attorney, asked the City Law Department to prepare the proposed changes in the names of two sponsoring councilmen. Friedman said the changes were recommended by the Electrical Contractors Association who reportedly asserted that much of the electrical work, not done by experts, is being "gummed up."

"There are a terrific number of cases where heating contractors have actually created fire hazards with faulty electrical work," Friedman charged.

But Building Commissioner William D. Guion denied the charge and said he will oppose the change as "needless legislation with no advantage except for the electrical contractors."

## Beresford, Margolf Get Coolerator Sales Posts



H. C. BERESFORD



F. C. MARGOLF

DULUTH, Minn.—Following the election of G. L. Rees and S. W. Skowbo as Coolerator president and executive vice president, The Coolerator Co. announced two new appointments in the sales department.

H. C. (Hi) Beresford has been named director of sales and advertising and Fred C. Margolf has been appointed sales manager.

Beresford was the first advertising and sales promotion manager for Coolerator. He is given major credit for the establishment of Coolerator as a prominent "national brand" in the appliance field. He returned to Coolerator in 1950 as advertising and sales promotion manager and was subsequently promoted to director of advertising and sales promotion.

F. C. Margolf, formerly Coolerator regional manager for the New England and mid-Atlantic states, is a veteran of more than 25 years in the home appliance field. Margolf has previously been associated with the General Electric home laundry sales division; Hotpoint, as Philadelphia district sales representative and manager, home laundry sales division; and Simon Distributing Corp. of Washington as sales manager. He joined Coolerator in 1949.

Coolerator sales and merchandising programs as a part of the IT&T-sponsored Coolerator expansion program will be revealed to the Coolerator distributor organization on Feb. 22.

## Instruction Book--

(Concluded from Page 1, Column 4) operates, how to take care of it, how to make simple repairs and adjustments that do not require expert technicians, the functions of various parts, and the names of those parts.

Manufacturers would have to get FTC approval of their books before they issued them. The Federal Trade Commission, however, would have the power to exempt any types of appliances where, based on findings, it decided that an instruction book would be of no substantial assistance to the user.

FTC would also have the power to certify violators to the attorney general for prosecution. Violations would constitute a misdemeanor with a fine up to \$5,000 or a year's imprisonment.



## Leonard Line--

(Concluded from Page 1, Column 2)

movable butter-chest is provided as standard equipment with the two-door combination, and as an optional accessory with the 8 to 11-cu. ft. models.

Topping the line is the two-door refrigerator-freezer combination, with 12 cu. ft. of cold space, including a 70-lb. freezer.

A device called the "humidplate" controls moisture as well as cold in the lower compartment, and defrosts itself automatically.

There are two 11-cu. ft., full-length-door models. Both have full-width frozen food chests of 43 lbs. capacity, and refrigeration from top to base. One (LMA) has the new self-defrosting feature.

Three models are in the 8 to 9-

TWIN CONTROLS at top of cabinet identify this as a 1952 Leonard with true self-defrosting. The refrigerator which makes the refrigerator cold is also used to melt frost, by means of a simple change in the manner in which it is circulated.

cu. ft. class. Two are equipped with 33-lb., full-width frozen food chests, the other with a 31-lb. side evaporator. One of the full-width freezer models (LEA) incorporates the self-defrosting feature.

Completing the line are two 7-cu. ft. models in 24-in.-wide cabinets, refrigerated from top to base. One offers a 27-lb., full-width freezer, and the other a side-mounted evaporator of 25 lbs. capacity.

Suggested retail prices, including five-year protection plan on the sealed mechanisms, are:

Model	Cu. Ft. Capacity	Price
LMT	12	\$499.95
LMA	11	409.95
LMH	11.6	369.95
LEA	8	344.95
LEH	8.3	299.95
LES	9	269.95
LNH	7.1	259.95
LNS	7.6	229.95

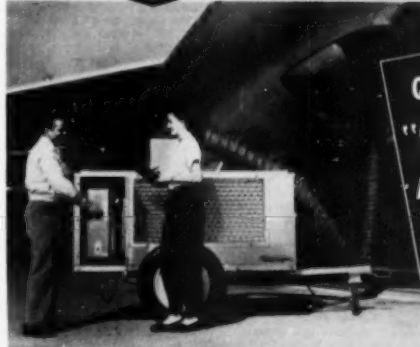
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\* Remington Mobile Cooler air conditioning plans at leading for final assembly in field.

## Here's All You Do!

Get down all the new, practical uses you can think of for the Remington Mobile Cooler. Send them to George F. Taubeneck, the Editor of this magazine (address listed below). He has a list of uses we've thought of. If your list includes an application that is different and practical, we will send you one new hat. It's that easy! Every person who suggests a new use wins! Send in your suggestions today. Offer closes April 1, final.



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AIR DUCT—Collapsible, 25 foot long, flexible duct is supplied.

SUGGESTED USES—Spot cooling for aircraft industries; mobile hospitals; underground water, telephone and utility repair mains; and others.

## Send Yours in NOW!

Send suggestions to George F. Taubeneck, Air Conditioning and Refrigeration News, 450 W. Fort St., Detroit 6, Michigan. Profit from the widespread need for this portable air conditioner by selling it now! For more detailed sales information write for Bulletin RS-56T, Remington Air Conditioning, 11 Willey St., Auburn, N. Y.



AIR CONDITIONING DIVISION OF REMINGTON CORP. AUBURN, N. Y.

Reserve Capacity FOR HEAVY-DUTY USE

SWEDEN FREEZERS  
SWEDEN FREEZER MANUFACTURING CO.  
SEATTLE 19, WASHINGTON

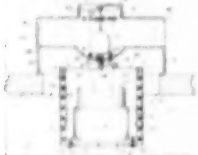
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## PATENTS

Week of November 27  
(Continued)

**2,576,549. AIR-CONDITIONING UNIT.** Carl J. Wagner and Grant V. Mack, Warren, Mich., assignors to Marvel Industries, Inc., Warren, Mich., a corporation of Michigan. Application Dec. 13, 1949, Serial No. 143,518. 6 Claims. (Cl. 68-117.45.)



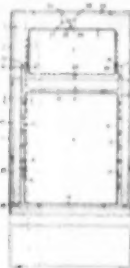
1. In a room to be air conditioned, air conditioning apparatus mounted on the floor of said room comprising upper and lower chambers, a wall separating said chambers, a refrigerant evaporator coil in the upper chamber, a motor driven fluid refrigerant compressor in the lower chamber, a condenser coil for compressed refrigerant also in said lower chamber, said upper chamber communicating with the atmosphere within the room and said lower chamber communicating with the atmosphere beneath the floor through an aperture therein, an air circulating fan within said upper chamber, an air flow controlling baffle within said lower chamber surrounding said compressor and said condenser coil, and an air circulating fan within said lower chamber for drawing air from beneath said floor to be directed by said baffle over said compressor and condenser coil and back underneath said floor.

**2,576,583. TWO-TEMPERATURE REFRIGERATING SYSTEM.** Leonard W. Atchison, Erie, Pa., assignor to General Electric Co., a corporation of New York. Application Dec. 29, 1949, Serial No. 97,594. 9 Claims. (Cl. 68-4.)



1. In the refrigerating system, a low temperature evaporator, a higher temperature evaporator, condensing apparatus for circulating refrigerant in the system, means for selectively directing refrigerant to either of said evaporators, a fan for circulating air over said higher temperature evaporator, means for driving said fan, and means operative at all times that refrigerant is supplied to either of said evaporators for actuating said driving means.

**2,576,660. AIR CIRCULATING ARRANGEMENT FOR REFRIGERATORS.** Harley H. Bialer, Erie, Pa., assignor to General Electric Co., a corporation of New York. Application Dec. 8, 1949, Serial No. 131,845. 7 Claims. (Cl. 68-69.)



1. A refrigerator cabinet having an outer wall, a spaced inner wall forming a first compartment, a second spaced inner wall forming a second compartment, heat insulating material in the space between said outer wall and said inner walls, means for refrigerating said inner walls to cool said compartments, said first compartment being maintained at a lower temperature than said second compartment, and a continuous passage in the space between said outer and said inner

walls communicating with said first compartment for circulating air through said heat-insulating material and through said first compartment for removing moisture from said space and depositing it within said second compartment, a first portion of said passage being disposed adjacent the exterior of said wall of said second compartment and being arranged in communication with said first compartment, a second portion of said passage being disposed adjacent said outer wall of said cabinet and being arranged in communication with said first compartment.

**2,576,691. COMPARTMENTED REFRIGERATOR DOOR.** Roland E. Money, Mount Healthy, Ohio, assignor to Artkraft Mig. Corp., Lima, Ohio, a corporation of Ohio. Application March 13, 1949, Serial No. 91,196. 6 Claims. (Cl. 215-214.)



1. A refrigerator cabinet including a hingedly mounted front door having an outside wall, an inside wall and insulation between the walls, and a plurality of open top storage containers disposed one above the other adjacent the inside wall, each container having a pivotal connection removably connecting it to the inside wall, said connection comprising a pin and slot engaging to provide for swinging the container from a closed position to an inclined upright open position in which the container engages said inside wall.

### AVAILABLE FOR LICENSING OR SALE

General Electric Co. offers the following patents for non-exclusive licensing on reasonable terms to domestic manufacturers. Applications for licenses may be addressed to the Manager, Patent Department, General Electric Co., 1 River Road, Schenectady, N. Y.

Pat. 2,548,583. Support for Shelf or Basket Rail Within a Refrigerator. Apr. 10, 1951, Reg. No. 45,443.

Pat. 2,548,608. Flow-Controlling Device for Refrigerators. Apr. 10, 1951, Reg. No. 45,444.

Pat. 2,548,643. Refrigerant Flow Controlling Device. Apr. 10, 1951, Reg. No. 45,445.

Pat. 2,548,353. Temperature Control System. Mar. 13, 1951, Reg. No. 45,491.

### Week of December 4

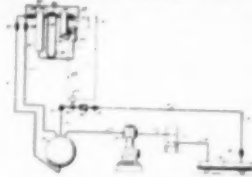
**2,577,107. COMPRESSOR HEAD COOLING SYSTEM FOR REFRIGERATOR MACHINES.** Kenneth E. Cooper, Fort Wayne, Ind., assignor to General Electric Co., a corporation of New York. Application May 9, 1947, Serial No. 746,908. 12 Claims. (Cl. 68-117.8.)



1. In a refrigerating system, a reciprocating compressor having intake and discharge chambers, a condenser connected to receive compressed refrigerant from said compressor, means for collecting a body of refrigerant liquefied by said condenser, means providing communication between said last mentioned means and said discharge chamber for conducting

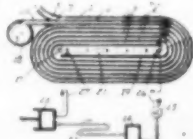
liquid refrigerant to said discharge chamber to cool the gas therein, the flow of liquid to said discharge chamber being produced by instantaneous differences in pressure between the discharge gases in said chamber and said condenser due to surging, and a check valve in said liquid conducting means for preventing back flow of refrigerant from said discharge chamber through said liquid conducting means.

**2,577,356. LIQUID LEVEL CONTROL FOR VOLATILE LIQUIDS.** Theodore J. Peckert, Los Angeles, Calif. Application Sept. 15, 1947, Serial No. 774,041. 15 Claims.



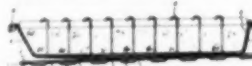
1. Means for controlling the level of a volatile liquid in a chamber forming part of a circulatory system and including a pipe supplying fluid to said chamber and a valve controlling said pipe, a substantially U-shaped controlling system having one leg conduit connected by a gas filled conduit to the bottom of said chamber and its other leg conduit connected by a gas filled conduit to the top of said chamber, said last leg including a float, said legs having a liquid pressure transmitting medium in their joined lower parts, and means controlled by said float and including operating means for said valve.

**2,577,359. APPARATUS FOR HEAT TRANSFER BETWEEN FLUIDS.** Charles A. Phipps, Hartsdale, N. Y.; Frank Northrup Magill, executor of said Charles A. Phipps, deceased, assignor to Carolyn Magill Phipps, Hartsdale, N. Y. Application Nov. 16, 1946, Serial No. 716,335. 9 Claims. (Cl. 68-140.)



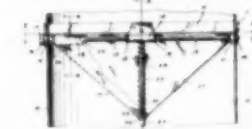
6. Device for drying air comprising a pair of spaced metal strips wound in the form of a convolute about a substantially vertical axis providing an open air passage reversing on itself at the center, closure means on the two edges of the convolute, a heat transfer device having heat absorbing means positioned in said air passage near the center of said convolute connecting with heat releasing means positioned exteriorly of said convolute, a water discharge passage connecting with said air passage at a low point near the center of said convolute, and an air blower connecting with an outer end of said air passage for forcing air therethrough.

**2,577,398. FREEZING TRAY.** James Williamson, Schenectady, N. Y., assignor to General Electric Co.



1. A freezing tray comprising an inner pan-shaped element, an outer thin flexible element covering the exterior of the bottom of said pan-shaped element and disposed immediately adjacent thereto along the entire exterior surface of said bottom, said flexible element being sealed along its edge to said pan-shaped element to exclude moisture from the region between said elements.

**2,577,405. PROPORTIONING FLOW DAMPER.** Ben Cones, Indianapolis, Ind.

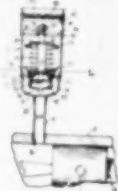


2. A damper construction for varying volume flow comprising a pipe; a collapsible damper comprising a generally triangular shaped flexible bag having an approximately pipe diameter base opening, a leaf spring attached to and extending across each base side of the bag normally in a straight line for open damper condition; a screw-threaded rod revolvably carried by said pipe along and in substantial parallelism with said damper; and means for securing the damper to the pipe, one at least of said carriers being screw-threadedly engaged with said rod to bow and straighten said damper in accordance with selected directions of rotation of said rod.

**2,577,406. REFRIGERATION EXPANSION VALVE.** Franklyn Y. Carter, Dearborn, Mich., assignor to Detroit Lubricator Co., Detroit, Mich.

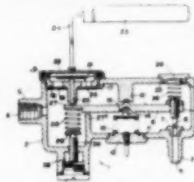
1. In a refrigeration expansion valve, a valve casing having an inlet and an

outlet, a valve member for controlling fluid flow through said inlet, lever means



for moving said valve member and having a fixed fulcrum point for normal operation, thermosensitive means for rotating said lever means about said fulcrum point, and means responsive to a condition of the fluid passing through said casing and operable to move said lever means away from said fulcrum point to control movement of said valve member, said responsive means holding said lever means against said fulcrum point during normal operation.

**2,577,455. PRESSURE REGULATOR.** Earnest J. Dillman, Detroit, Mich., assignor to Detroit Lubricator Co.



1. A pressure limiting valve for controlling the inlet pressure to a compressor, comprising a cup-like casing having an outlet aperture through its end wall, a transverse supporting member in said casing and having a central aperture surrounded by flow ports, a cup-like bellows end wall member forming a dash pot housing and extending through and secured in said central aperture and having its base adjacent said outlet aperture, a metal bellows member having one end sealed to the rim of said wall member, a head plate member having its periphery sealed to the other end of said bellows member and having a central opening, a valve port plate member extending across said casing in spaced relation to said head plate member and having a central valve port, a valve stem secured and sealed in said head plate member central opening and having one end extending through said valve port and having its other end extending into said dash pot housing, a valve member secured on said one stem end and operable to close said valve port upon contraction of said bellows members, a piston in said dash pot and secured to said other stem end, liquid in said dash pot, a stop plate member in said casing and having an aperture for passage of said stem therethrough, a helical coil spring in said casing and surrounding said stem, said spring being held under compression between said stop plate member and said head plate member, said piston being engageable with said stop plate member to limit expansion of said bellows members by said spring.

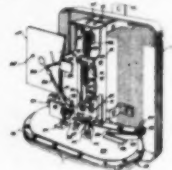
### CORRECTION

In the summary of Patents Issued for the Week of Aug. 29, which appeared in the Nov. 12 issue of the NEWS, the following patent was omitted:

**2,566,960. VALVE FOR REFRIGERANT COMPRESSORS.** Thomas G. Crider, Lima, Ohio, assignor to The Crider Corp., Lima, Ohio.

1. A valve structure for a refrigerant compressor having a cylinder with an operating piston therein and a head for providing inlet and outlet passages from the cylinder, comprising a valve plate positionable between the cylinder and the head, said valve plate having an inlet port and having a recess surrounding the inlet port with the inlet port positioned eccentrically thereof, a valve seat in the form of a rib positioned in the recess and extending around the inlet port eccentrically, a flexible valve member assembled with the valve plate and arranged to seat on the rib to seal the inlet port, and another rib in the recess against which the valve member is adapted to seat, said rib providing a chamber closed by the flexible valve member for the trapping of oil to cushion the action of the valve member in seating on the ribs.

**2,577,006. PRESSURE GAUGE.** Raymond L. Conley, Milwaukee, Wis. Application Aug. 15, 1946, Serial No. 650,669. 3 Claims. (Cl. 73-408.)



1. A gauge comprising a movable condition responsive element, a shaft supported for rotation and having associated therewith a condition indicator, an adjustable spring spaced from said condition responsive element, connecting means connecting said condition responsive element and said adjustable spring and movably linearly in response and proportional to movements of the former, said connecting means comprising a yoke, extending above and below said shaft, elongated spring tensioned means having an intermediate portion wound around said shaft and having one end attached to the portion of the yoke below said shaft and its other end attached to the portion of the yoke above said shaft, and spaced means on each of said portions of the yoke for alternately attaching the ends of said spring tensioned means when said spring tensioned means is wound in one or the other direction around said shaft.

(To Be Continued)

### NEW PRODUCTS?

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## Norge Produces Jet Plane Sections Right Along With Refrigerators

MUSKEGON HEIGHTS, Mich.—Six major sections of the Republic Aviation Corp. jet powered fighter plane known as the Thunder Jet are currently being produced right along with refrigerators in the Norge plant here, J. W. Webster, central sales manager for Norge Div., Borg-Warner Corp., revealed recently.

"We have completed tooling on four of the major sections and are in production on them," Webster declared. "We are still tooling up for the other two sections and plan to be in production sometime in February or early March.

"We expect to employ up to 1,000 people in the production of these air frame sections. We are presently using about 250,000 sq. ft. of manufacturing floor area and plan to expand both the floor area and machine facilities to permit us to negotiate for further contracts of this nature.

"Our facilities and the skills of our personnel are best adapted to sheet metal fabrication and assembly so that a minimum of conversion is necessary in taking on defense contracts."

Webster recalled that Norge had prepared a brochure on its facilities last summer and circulated it to the purchasing agents of every air frame manufacturer in the country.

"The response was excellent," he said, "and we are now following up on the replies which we received."

### MORE INFORMATION?

Use Handy Coupon on "What's New" Page of this issue.  
Use Key No. for fastest service.

## French Allowed To Import Some Refrigeration Items

WASHINGTON, D. C.—The French government has advised importers of the opening of dollar credits for a list of items including regulating apparatus for air conditioning equipment, spare parts for freezing equipment, and compressors, according to the Office of Small Business, Economic Cooperation Administration.

The agency said American suppliers should advise their clients or agents abroad that credits are available for the commodities listed. Suppliers without clients or agents in France may secure names of French importers in the past under ECA financing from an ECA booklet available through the Small Business Office of Commerce Department.

## Hem Olson Moves to Site Opposite Bus Terminal

CORAL GABLES, Fla.—Hem Olson, who operates an appliance and air conditioning firm, has moved to new quarters at 310 Aragon Ave. here.

For the past 18 months, Olson has carried on his business in a small building at 314 Aragon, which sets back 80 ft. from the avenue. His present store, air conditioned and modern in decor, has more than double the amount of space and directly faces the Coral Gables bus terminal which is nearing completion.

The firm carries the Blackstone laundry equipment line; International Harvester appliances; Fedders, Westinghouse, and Mitchell air conditioning; Kresky fuel oil burners; Emerson radio and television; and of small electrical appliances.

As an opening special, 100 packages of frozen foods were given free with each purchase of an International Harvester freezer.

# Government Contracts

## PROCUREMENT INFORMATION

The following is a list of proposed procurements issued by the various indicated U. S. Government procurement offices. This list is compiled and made available daily on a free pick-up basis.

### DEPARTMENT OF DEFENSE

It is not necessary to refer solely to the issuing office for additional data on a bid invitation issued by any of the following U. S. Army Ordnance Offices: Ordnance Tank Automotive Center, Detroit Arsenal; Frankford Arsenal; Picatinny Arsenal; Harpers Arsenal; Rock Island Arsenal; Springfield Arsenal; Watertown Arsenal; and Watervliet Arsenal.

Invitations for Bids numbers will be followed by the letter "B." Requests for proposals or quotations will be indicated in this column by the letter "Q." or, if numbered, the number will be followed by the letter "Q." This will save time in filling your request. For reasons of economy, specifications are normally not included with the bid invitations unless the specification is a new one. First time bidders on a particular item should request a copy of applicable specifications and drawings at the time the request for a bid is made.

Description	Quantity	Invitation No.	Opening Date
Commanding Officer, U. S. Naval Air Station, Corpus Christi, Texas			
Magnetic Starter Switch	1 ea	216-60-53	5 Feb 52
Heat exchanger	1 ea	216-60-53	5 Feb 52
Water pump	1 ea	216-60-53	5 Feb 52
Disconnect switch	1 ea	216-60-53	5 Feb 52
Air handling unit	1 ea	216-60-53	5 Feb 52
Freon shell & tube condenser	1 ea	216-60-53	5 Feb 52
Atmospheric cooling tower	1 ea	216-60-53	5 Feb 52
Navy Purchasing Office, 111 East 16th Street, New York City, New York			
Fans, electric	7000 ea	225-B	7 Feb 52
Fans, electric	8000 ea	225-B	7 Feb 52
Fans, electric	13200 ea	225-B	7 Feb 52
Commandant Of The Marine Corps, Washington, D. C. Attn: Supply Department Procurement Section			
Fans, air circulating, floor type, spec.	800 ea	719B	20 Feb 52
District Public Work Office, Headquarters Fifth Naval District U. S. Naval Base, Norfolk 11, Virginia			
Air conditioning for panel spaces building N-26 at the US Naval Base, Norfolk, Virginia		71047	12 Feb 52
deposit 10 dots required for plans and specifications			

## GENERAL SERVICES ADMINISTRATION

Description	Quantity	Reference No.	App. Bid Date
General Services Administration, Federal Supply Service, Room 328, U. S. Court House, Chicago 4, Illinois			
Refrigerators, gas & elec. domestic & com. l.	49 ea	CHN-1028	2-12-52
Regional Information Office, Region 3, General Services Administration, Washington 25, D. C.			
Valves, gate, flanged various sizes	18 ea	3K-385-E	2-12-52
Office Of Regional Director, General Services Administration, 1000 Federal Office Building, Kansas City, Missouri			
Installation of exhaust fans, etc., Webster City, Iowa Post Office		C R 141	2-15-52

## U. S. DEPARTMENT OF COMMERCE

Procurement Branch Civil Aeronautics Administration, 30 Seventh Street N.E., Atlanta 4, Georgia	22-158	2-4-52
Chief, Supplies and Services Branch, Technical Development and Evaluation Center, Civil Aeronautics Administration, P.O. Box 3767, Indianapolis 11, Indiana	125 ea	2-11-52
Switch, solenoid operated, in accordance with drawings	175 ea	43
Switch, solenoid operated, in accordance with drawings		2-11-52

## NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

Ames Aeronautical Laboratory, Moffett Field, California		
Refrigerant freon 12 in cylinders	2320 lbs.	A-7548 2-5-52

## CONTRACTS AWARDED THROUGH JAN. 28

Ships Parts Control Center, Naval Supply, Mechanicsburg, Pa. Repair Parts for Refrigeration Equipment.—10458 \$52,298.—York Corp., 1616 Walnut St., Philadelphia 3, Pennsylvania  
Valves and Repair Parts.—22392 \$58,112.—Henry Valve Co., 2315 North Ave., Melrose Park, Ill.  
Chicago Quartermaster Depot, QM Purchasing Division, 1918 West Fershing Road, Chicago 9, Illinois  
Refrigeration, frozen food.—50 \$184,910.—Howard Refrigerator Co., Inc., 4745 Worth St., Philadelphia 24, Pennsylvania  
U. S. Navy Purchasing Office, Washington, D. C.  
Water coolers, electric.—765 \$38,377.—Westinghouse Electric Corp., 1625 K St. N.W., Washington, D. C.  
Navy Department, District Public Works Office, First Naval District, Navy Building, 485 Summer St., Boston 10, Massachusetts  
Architectural-engineering services for construction of cold storage plant, U. S. Naval Supply Depot, Newport, R. I.—\$40,000.—Gautsme & McMullen, Engineers, Architects, 10 Chauncy Street, Boston 11, Massachusetts.

## Brightman Distributes Admiral In St. Louis Area

ST. LOUIS—Harry P. Brightman, formerly sales manager for the Admiral distributorship in Washington, D. C., has organized the Brightman Distributing Co. here to distribute Admiral products in eastern Missouri and southern Illinois.

Located presently at 3519 Page Blvd., the firm is building a new warehouse and office near Chippewa and South Kingshighway. The building will provide 30,000 sq. ft. of space and will be ready by June 1.

W. V. Porter, who was general manager of the Stanley Distributing Co., former Admiral distributor in the St. Louis area, will supervise rural sales for Brightman.

## Wyatt Heads Bakersfield Appliance Dealers Group

BAKERSFIELD, Calif.—Bill Wyatt of Oldale Hardware Co. has been named president of the Radio, TV, Appliance Dealers Association of Bakersfield, the association announced recently.

Chester Trone of Trone's Gas and Electric Appliances was chosen secretary and Ed Darrow of Radio Den, vice president.

## Leviton Catalog Lists 1,000 Wiring Devices

BROOKLYN—A 96-page catalog listing the complete line of wiring devices for industrial, commercial, and residential use made by the Leviton Mfg. Co. here was announced recently.

More than 1,000 items are listed and described. Dimensions and wiring diagrams are included.

## Mogul Brochure Describes Soldering Gun, Shows Uses

CHICAGO—Recently published is an eight-page brochure, "Mogul Soldering & Brazing Equipment," offered by the Metallizing Co. of America here. The illustrated booklet describes the new "Mogul Soldering Gun" and shows applications of its use to production-line soldering and brazing.

## Colonial Store Organized

SALISBURG, N. C.—Colonial Furniture House & Appliances, Inc. here has been organized with capital stock of \$100,000 to deal in furniture and home appliances. Fred Hedrick, James Swicegood, and Margaret Swicegood, all of Lexington, were listed as the incorporators.

## Waters In I-H Post In Memphis To Handle Refrigeration

MEMPHIS, Tenn.—H. A. Waters is the new assistant district manager for the International Harvester general sales office here. Waters will handle refrigeration equipment for the I-H sales organization.

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RATES for "Positions Wanted" \$5.00 per insertion. Limit 50 words. 10¢ per word over 50.

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### POSITIONS WANTED

REGIONAL SALES supervisor for major manufacturer of air conditioning and refrigeration products desires new connection. Twenty years' experience in promotion and distribution of air conditioning and refrigeration equipment. Will consider either direct connection or as manufacturer's agent. BOX 3909, Air Conditioning & Refrigeration News.

### POSITIONS AVAILABLE

A DETROIT refrigeration firm has need of two experienced commercial refrigeration service men. Tools and car necessary. Good pay and working conditions. Write giving full particulars. BOX 3801, Air Conditioning & Refrigeration News.

OPPORTUNITY FOR district sales manager. Leading manufacturer of refrigeration and air conditioning products is looking for aggressive executive for Midwest territory to handle sales to distributors and jobbers of complete line of electric drinking water coolers for industrial and commercial end users. Salary and commission setup backed by nationally known AAA-1 corporation with 50 years reputation. Write in confidence giving full details of background. BOX 3907, Air Conditioning & Refrigeration News.

ENGINEER—MANUFACTURER of industrial & commercial refrigeration equipment requires refrigerating engineers with sheet metal and piping production experience to assume layout and design responsibility and assist in product development. Progressive, well financed, but smaller and flexible company with heavy backlog of both defense and civilian work—two men required—one New York City office—one Virginia plant. Give full details, including recent salaries, in resume. BOX 3808, Air Conditioning & Refrigeration News.

### EQUIPMENT WANTED

ONE GENERAL Electric type H leak detector. MOHAWK CABINET COMPANY, INC., 721 State St., Utica, New York.

### EQUIPMENT FOR SALE

PROMINENT BRAND freezers 50¢ off—fifteen cubic foot—glass roller doors—stainless steel top—list price \$652.84—your cost \$326.42. Ten cubic foot—stainless steel top and doors—list price \$517.70—your cost \$258.85. Many other bargains—commercial and domestic. Write, wire or phone—prices FOB. N.Y. ELECTRIC SERVANT CO., 71-73 South Broadway, Yonkers, N. Y. Phone Yonkers 8-6690—Established 1922.

WHILE THEY last—relays, all makes, some as low as \$5.00; ½ h.p. hermetic units, \$47.50; capillary tubes for all sealed

units, \$1.25. FERNDALE REFRIGERATION SUPPLY, 38 Flowerdale Street, Ferndale 20, Michigan.

\$52 BUY standard brand ¼-hp open type or sealed type complete units. Other sizes up to 3-hp. ¼-hp @ \$29.50. Write for complete listings on units and parts, including Klaxon covered relays @ 1¢. MANN REFRIGERATION SUPPLY CO., 440 Lafayette Street, New York 3, N. Y.

PROMINENT BRAND ¼ HP sealed units Model 2388. Special price \$38.50 in lots of 10 or more. Also combination Lowboy refrigerator and freezer 7½ cu. ft. with stainless steel top, 36" height—List price \$329.95. Special close-out price \$150.00 each in lots of 5 or more. SEABOARD DISTRIBUTING CO., 1421 N. W. 7th Avenue, Miami, Florida. Phone 82-4558.

FOR SALE—brand new ½ h.p. hermetic compressors. Model S-68—8½" high. Complete with relay and overload \$44.50. Send for your list on driers, valves, belts, pressure controls, fittings, relays. Supplies and parts at great savings. Sold on money back guarantee. WALTER W. STARR, 2833 Lincoln Ave., Chicago 12, Illinois.

SURPLUS INVENTORY for sale. Dole and Kold-Hold freezer plates 12 x 144. Temprite oil separators 100, hand valves sweat ½, ¾, 1". Also expansion valves 2 ton Freon and Methyl, H D fitting tees and adapters up to 1½, meat track switches, motors 1/20 to 7½ HP, York insulated track doors, steel food lockers. Discount off todays cost for quantity orders. YORK LIMA COOLING COMPANY, 450 South Main St., Lima, Ohio.

### BUSINESS OPPORTUNITIES

REFRIGERATION SALES & service business with \$11,000 yearly income from labor alone. Exclusive commercial equipment sales & service dealership, plus factory service contract for domestic line, both grade "A" lines. Ideal business in suburban NYC for 2 service partners with some sales ability. \$4,000 cash for stock equipment & trucks. Balance terms. Gibraltar 2-9171 or write BOX 3910, Air Conditioning & Refrigeration News.

### MISCELLANEOUS

"SEALED UNIT Rebuilding-Basic Tools & Methods" now in its third and final printing. This course of trade secrets gives complete information on equipping a shop to handle this work. Information found nowhere else. \$12.50 while supply lasts or write for details H. CUSTER, Box 98, Center Line, Michigan.

NORGE SEALED units remanufactured or exchanged. Immediate delivery from stock. 1 year warranty. Write for prices and shipping instructions. Genuine Norge terminals for Norge sealed units. Complete set of three, \$1.15 plus postage. MODERN REFRIGERATION CO., INC., 12541 E. McNichols Road, Detroit 5, Michigan.

FOR SALE—copper tubing—dehydrated 50 foot coils ¼", \$2.17—¾", \$4.71—½", \$6.25—¾", \$8.27—¾", \$9.83 also type K hard 20 foot lengths ½" OD, \$7.82 & 1½" OD, \$9.70. Send CMP certification with order. BOX 3911, Air Conditioning & Refrigeration News.

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by James J. LaSalvia

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A modern series of 3 simplified, practical training manuals and reference books to help you with the layout and installation of comfort air conditioning.

The Key to Air Conditioning gives you a whole picture of comfort air conditioning in crystal clear language. It gives immediate answers to almost every problem in layout and installation. It covers the important details that add up to larger profits on your air conditioning jobs. The author, James LaSalvia, is an experienced engineer of 30 years with extensive background in teaching and writing.

MANUAL NO. K-1—The physics of air conditioning; use of charts; methods of ventilation; figuring air requirements; refrigeration problems in air conditioning; use of fans; methods of air distribution. Psychrometric chart included with book.

MANUAL NO. K-2—Sheet metal ducts (sizing methods, problems of design); discussion of air cleaning devices; heat transmission coefficients; problems and tables for figuring heat gain; air through cooling coils; selection of cooling coils, expansion valves, compressors, and water cooling coils.

MANUAL NO. K-3—General discussion of heating systems; selection of heating coils (air friction, condensation); description and operation of evaporative condensers; water cooling towers; automatic controls; piping refrigerant, water, and steam; and insulation problems.



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2-4-52

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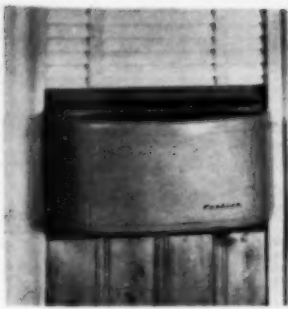
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Carrier 1/2 hp. Window Unit

## Carrier Window Unit --

(Concluded from Page 1, Column 2) sor, streamlined heavy gauge cabinet, and five-year warranty.

The unit is being produced in a newly developed pearlescent finish, which harmonizes with any combination of room colors. Window mountings are equipped with a special new weatherproofing seal, which has been tested under simulated heavy winds and rain.

Simplified fingertip controls can be set for cooling and dehumidification with either outside or room air, or for ventilation only with filtered outside air.

Carrier's exclusive Humitrol, which provides greater dehumidifying action on excessively humid days, is available as an optional accessory.

## Durables Mfrs. Won't Get Much Extra Aluminum

WASHINGTON, D. C.—Though the Air Force may turn back some 20,000,000 lbs. of aluminum it won't be able to use during the second quarter, manufacturers of consumer durable goods are not expected to get very much of it.

The Air Force is not expected to use the metal because the jet engine program is lagging.

The Defense Production Administration, however, does not plan to reallocate more than 10 or 15% of the aluminum it gets back. Instead it hopes to use it to fill CMP allotments already made. DPA has already issued more tickets than can be filled from second-quarter production of the metal.

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2824 27th Avenue South, Minneapolis, Minn.

## NPA Would Cut Copper, Aluminum In Heating Items

WASHINGTON, D. C.—Revisions of a proposed "conservation order" aimed at saving critical materials, was discussed by the Extended Surface Heating Equipment Industry Advisory Committee at a meeting with the National Production Authority.

The proposed order would limit the permissible wall thickness of copper tubing in unit heaters, unit ventilators, blast coils, convectors, baseboard and wall fins; and prohibit the use of aluminum in grilles and various types of propeller fans.

While the committee agreed that the saving of aluminum as a result of the proposed conservation order would be of no economic advantage to the industry, members said that they would be willing to accept the order in view of the tight aluminum situation.

The industry recommended to NPA that the proposed order be submitted to the Departments of the Army and Navy and the Atomic Energy Commission for comment on their willingness to award contracts for extended surface heating equipment to the industry under the proposed limitations.

NPA accepted this recommendation and said it would also circulate a draft of the proposed order to the 133 manufacturers in the industry for their comments.

NPA told the industry that:

1. Steel sheet and strip, with the exception of galvanized sheet, are in fairly good supply.
2. Military requirements for copper will reduce the availability of brass mill products to the industry.
3. Distributors' inventories of brass mill products are now dangerously low.

The committee told NPA that its reduced allotments of steel, copper, and aluminum each successive quarter is working a hardship on the industry, and that it may be unable to supply the heating equipment for new construction authorized by NPA unless it receives additional allotments.

The industry also reported that it was unable in several cases to get mills to accept orders for delivery of critical materials, particularly galvanized sheet steel.

NPA said it would help such companies to place their orders if they file requests for assistance with NPA on NPA Form 148.

Committee members attending included: M. Noble, Aerofoil Corp.; Richard H. Nelson, American Air Filter Co., Inc.; Ray C. Edwards, Edwards Engineering Co.; C. W. Little, Fedders-Quigan Corp.; C. G. Newton, Kritzer Radiant Coils, Inc.; H. Blake Thomas, McQuay, Inc.; A. G. Dixon, Modine Mfg. Co.; W. G. Schlichting, Young Radiator Co.; Albert J. Nesbitt, John J. Nesbitt, Inc.; Harold E. Park, Shaw Perkins Mfg. Co.; J. E. Reed, Sterling Radiator Co.; E. A. Cline, The Trane Co.; J. H. Smart, Tuttle & Bailey, Inc.; T. L. Arnold, Vulcan Radiator Co.; H. S. Wheller, L. J. Wing Mfg. Co.

## Contractor Shakedown --

(Concluded from Page 1, Column 1) (graft) ranged from a cigar and a bottle of liquor up to \$50, the testimony brought out.

However, with the average Fire Department fee for refrigeration installation averaging "around \$10, there wasn't much opportunity to shake down an installer for more than a couple of bucks. "It was a piddling thing" was the way in which a witness described the graft from refrigeration installations. The total ran to about \$1,500 a year in 1948, of which Moran allegedly received \$1,000 to \$1,200.

Among contractors it was a well-known fact that "no fire department inspector would approve an installation without at least a cigar thrown in." However, because the graft on refrigeration jobs played such a relatively minor part in the whole setup, it is considered unlikely that there will be much fuss kicked up about it.

Some members of the industry expressed regret over the revelation of Lt. Frey as a graft-taker, pointing out that he was one member of the Fire Department staff that seemed to understand refrigeration.

## '53 Show Plans --

(Concluded from Page 1, Column 3) to take care of those who may want to stay over until Saturday or Sunday.

Exact time and place for the three Educational Conferences to be held between now and November, 1953, have not been set as yet. It is considered probable that one such conference might be held during November or early December of 1952.

Such a meeting would attempt to include a REMA board of directors meeting, a REWA meeting, a joint REMA-REWA meeting, and a three-day educational conference in which RSES, REWA, and RACCA may take part.

It is thought that the other two conferences will be in the northeast and northwest sections of the country with the dates probably in April of 1952, and January, February, or March of 1953.

## Musselwhite To Manage G-E Water Heater Sales

LOUISVILLE, Ky.—Appointment of R. T. Musselwhite, Jr., as manager of water heater sales of General Electric company's range and water heater department has been announced by J. F. McBride, manager of marketing.

Musselwhite, who has been acting as headquarters specialist for water heater sales since last May, first joined the company as a trainee at the general office in Schenectady in 1946. He was transferred to Bridgeport in 1947 and was subsequently appointed district representative for Cleveland.

## NPA Drops Controls on Chrome Stainless Steel

WASHINGTON, D. C.—The National Production Authority decontrolled chrome stainless steel effective Jan. 28.

Users can now purchase the metal without CMP tickets in any quantities they desire. Only restriction is that they cannot accumulate more than a 45-day inventory.

In line with this action, NPA reduced the amount of stainless steel that small users can obtain by self-certification from 1,500 lbs. per quarter to 500 lbs. The new limit applies only to nickel-bearing stainless steel, which is still in very tight supply.

The decontrol action was taken in Direction 9 to CMP Regulation 1.

## Mitchell Cuts Prices on All But 1 Model --

(Concluded from Page 1, Column 2) reduced was on the 1 1/2-ton model M-132. Price cuts on the others are as follows:

Model	Voltage	Capacity	Former Price	New Price
M-122	115	1/2 hp.	\$329.95	\$319.95
M-342	115	3/4 hp.	399.95	379.95
M-2302	230	1 hp.	419.95	389.95
M-2082	208	3/4 hp.	429.95	399.95
M-1002	230	1 hp.	469.95	459.95
M-12082	208	1 hp.	479.95	469.95

The new prices went into effect as of Jan. 15, according to Tracey. The price cut was feasible, he said, because of the vast increase in the company's air conditioner production during the past year.

## Crosley Freezer Buyers Offered Food Insurance

CINCINNATI—A comprehensive insurance policy covering food spoilage due to outside power interruption or any mechanical failure of the appliance has been made available to purchasers of Crosley home freezers by Crosley Div., Avco Mfg. Corp., according to S. L. Faust, manager of Crosley's freezer sales section.

The policy, which is optional, covers a period of three years. Coverage of \$100 can be obtained for \$5; \$200 for \$7; \$300 for \$9; \$400 for \$11; and \$500 for \$12.

Each freezer sold will contain an envelope and application which may be mailed to the insurance firm. Application must be made within six months of the date of purchase, and covers all Crosley home freezers.

Mitchell produced 54% more room air conditioners in 1951 than were produced in 1950, Tracey explained.

"This tremendous increase in the number of units allowed the substantial reduction in unit cost. Therefore, we are able to pass on to the consumer the advantages of increased production," Tracey concluded.

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REFRIGERATION UNITS WITH A  
**5 YEAR WARRANTY**  
POLICY



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We hereby make the following warranty and agree to the following 5 year Protection Plan to the original purchaser user, leaving the BRUNNER trademark to be free from defects in material or workmanship under the following provisions:

**STANDARD ONE-YEAR WARRANTY**

WE WARRANT THE BRUNNER EQUIPMENT bearing above serial number sold by us and all parts thereof to be free from defects in material or workmanship under normal use and service. The obligation under this warranty shall be limited to repairing, F.O.B. at Utica, N.Y., a replacement for any material or workmanship which proves defective within one year from date of original installation, which is returned to us F.O.B. Utica within and within 90 days of the date of original installation. The obligation under this warranty shall be limited to repairing, F.O.B. at Utica, N.Y., a replacement for any material or workmanship which proves defective within one year from date of original installation, which is returned to us F.O.B. Utica within and within 90 days of the date of original installation.

**FIVE YEAR PROTECTION PLAN FOR BRUNNER COMPRESSORS ONLY**

In addition to the one year warranty on the standard BRUNNER equipment, we also agree to repair, replace or exchange at our option F.O.B. Utica, N.Y., the original purchaser user only, at any time during the five years following date of delivery to the original purchaser user, if compressor body or deflector part be covered against U.T.A. N.Y. the deflector component or part thereof, if it is proved in our satisfaction, to be defective or damaged due to failure of material or workmanship. Competent body or deflector parts must be returned with proper Branner Application and BRUNNER equipment or any part thereof. There is no warranty extension as to said BRUNNER equipment or any part thereof which has been subject to any accident, alteration, or misuse.

**GENERAL CONDITIONS**

Performance by us under this warranty and 5 year Protection Plan is contingent upon claims being made and supported by proper Branner Application and we shall not be liable for any delay in delivery in performance of our obligations under this warranty and 5 year Protection Plan.

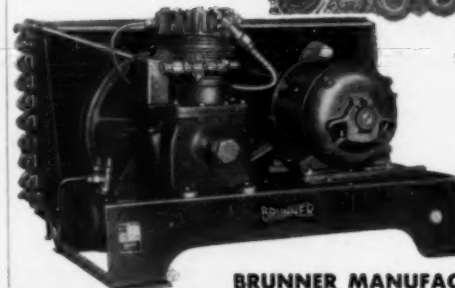
The term "original purchaser user" is used herein, shall be deemed to mean that person, firm, association or corporation who first acquires the BRUNNER equipment and who is the owner of the equipment at the time of original installation.

The Five Year Protection Plan applies only to BRUNNER compressors installed within the United States.

The Five Year Protection Plan does not include electrical motors, condenser, receiver, controls, valves, etc. This policy shall be void if said BRUNNER equipment is not installed in accordance with the instructions supplied with the equipment.

The foregoing warranty and 5 year Protection Plan are contingent upon the return of the equipment to the original purchaser user, or to a BRUNNER representative, or any part or parts thereof.

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Compressors installed in all BAC Air Conditioners are also offered with the BRUNNER 5 Year Protection Policy.

